DEFENSE INDUSTRY BULLETIN

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ASSISTANT SECRETARY OF DEFENSE-PUBLIC AFFAIRS

"Share in Freedom" Savings Bond Program

"Freedom must be at all times defended, because it is at all times besieged. Not all of us are called to fight on the battlefield. . . . Buying Savings Bonds, regularly, is as important to this nation in the long reach of history as almost anything we can do.

"We can do no less than those who fight and die for our freedoms. . . ."—President Lyndon B. Johnson.

See article, " 'Share in Freedom' Bond Program Recommended to American Industry," beginning on page 8.

Armed Force Day To Be Observed on May 20, 1967

Secretary of Defense Robert S. McNamara Salutes Members of the Military Services

On this Armed Forces Day, it is fitting that we honor the members of our Military Services whose actions throughout the world are worthy of our nation's noblest traditions.

We recognize that our heritage of freedom, with its accent on the dignity of the individual, is our most valued possession and that it must be constantly defended. Nowhere is this recognized more devotedly than in our Armed Forces.

In Vietnam, and wherever our forces are deployed, more than three million men and women in uniform sustain and defend this legacy against those who would destroy it. They know that freedom cannot be secure in America when it is threatened elsewhere in the world. They realize that our commitments in Vietnam, and to our allies elsewhere, must be upheld.

I urge all citizens to rededicate themselves to the ideals of service to country and devotion to duty exemplified by these courageous men and women and by their families.

Robt S. McNamara

American Helicopter Society's Annual Forum To Feature Operations/Management Symposium

The American Helicopter Society will sponsor an Operations/Management Symposium as part of its Annual National Forum to be held at the Sheraton-Park Hotel, Washington, D.C., May 10–12. The symposium will be held in the afternoon on May 11, starting immediately after the membership luncheon.

The purpose of the symposium will be to pinpoint problems and provide open discussion to develop a closer working relationship between industry and DOD personnel concerned with operations/management techniques in the helicopter/VTOL field. Major General Harry W. O. Kinnard, USA, Deputy Assistant Chief of Staff for Force Development, Department of the Army, will be the symposium chairman. Edward W. Goshorn, Boeing Vertol Division, will be assistant chairman.

The symposium is open to all who have an interest in the subject area. Attendees will also be welcome at a variety of other events of the forum including the Technical Trade Exhibit where several helicopters and many other products will be displayed.

An addition to this year's forum proceedings will be the premiere showing of the society's first motion picture, "Vertability," whose title corresponds to the theme of the forum. Preparation of this film was begun in December, when industry was asked to contribute its 16mm footage for selection of appropriate scenes illustrating the growth of vertical flight. After the premiere, the film will be made available first to the society's regions or sections, and then to other qualified groups for only the cost of mailing.

DEFENSE INDUSTRY

BULLETIN

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The purpose of the *Bulletin* is to serve as a means of communication between the Department of Defense (DOD) and its authorized agencies and defense contractors and other business interests. It will serve as a guide to industry concerning official policies, programs and projects, and will seek to stimulate thought by members of the defense-industry team in solving the problems that may arise in fulfilling the requirements of the DOD.

Material in the *Bulletin* is selected to supply pertinent unclassified data of interest to the business community. Suggestions from industry representatives for topics to be covered in future issues should be forwarded to the Business & Labor Division.

The *Bulletin* is distributed without charge each month to representatives of industry and to agencies of the Department of Defense, Army, Navy and Air Force. Requests for copies should be addressed to the Business & Labor Division, OASD(PA), Room 2E813, The Pentagon, Washington, D.C. 20301, telephone, (202) OXford 5-2709.

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Development of Procurement Policy

by

Lt. Col. Jacob B. Pompan, USAF

In the past few years the Armed Services Procurement Regulation (ASPR) has become an impressive document both in size and structure. As a direct result of Secretary of Defense McNamara's directive to eliminate the publication of implementing procurement regulations by each of the separate Services, the ASPR has become the sole source of major policy guidance for procurement within the entire Defense Department. Absorbing and standardizing much of what had previously been in the departmental regulations of the Military Services caused a natural expansion in the size of the ASPR, and has resulted in a much broader application of that regulation throughout industry as well as within the Services.

In addition to this expansion of the ASPR, the very character of the ASPR has been altered. Prior to this intensive effort to standardize procurement regulations, the ASPR had been primarily a document of major policy, as distinguished from one of procedures. Detailed procurement procedures were covered in the various procurement regulations of the Army, Navy and the Air Force. However, in the process of eliminating policy implementation from these Service regulations, it became apparent that policy and procedure were so closely intertwined that to standardize one while neglecting the other would, in many cases, result in no improvement, and could easily increase the danger of confusion. Today, therefore, the ASPR covers not only the policies but also many of the procedures to which all of the Services must adhere.

While this drastic change in size and character of the ASPR has its roots in sound procurement management, it has not been accomplished without difficulties. For instance, the size of the regulation alone makes its mastery as an operational tool an awesome task. In addition, the fine balance which is required between precise wording and an easy workability of the regulation is extremely difficult to achieve. But perhaps the single, most critical problem lies in the area of communication. While DOD undertook the development of a single procurement regulation in order to establish a standard throughout DOD in the policy area, and the largest part of that task has been accomplished, what remains is the not insignificant task of communicating to the operating level of both industry and Government the substance of the regulation in a totally understandable and usable form.

Although this communication problem is common to all large organizations, it could be particularly serious in DOD. The vast scope of defense contracting activities and the number of contract actions, as well as the broad jurisdictional coverage of the ASPR, all combine to create a potentially serious problem. However, this is an area that has not been neglected by DOD. A primary goal of the procurement policy organizations within DOD is to insure that the operating level within each of the separate Services and the Defense Supply Agency has a common understanding of the policies approved by the Office of the Secretary of Defense (OSD) and that they implement them in a manner consistent with approved DOD-wide standards.

Lt. Col. Jacob B. Pompan, USAF, is a student at the Air War College, Maxwell AFB, Ala. Before entering AWC he was assigned in the Directorate of Procurement Policy in Headquarters, USAF, and was the Air Force policy member of the Armed Services Procurement Regulation Committee. Upon completion of the course at AWC in June, Col. Pompan is scheduled to be assigned to the Defense Contract Administration Services, Defense Supply Agency.

The purpose of this article is to shed some light on how these procurement policies are developed and how the task of communication is being approached.

The Armed Services Procurement Regulation Committee.

The major portion of the ASPR is initially developed in depth and finally approved for publication by the ASPR Committee. This OSD committee is under the supervision of the Deputy Assistant Secretary of Defense for Procurement, in the Office of the Assistant Secretary of Defense (Installations and Logistics). It is made up of two representatives from each of the three Military Departments, two from the Defense Supply Agency (DSA), and a chairman and executive secretary from OSD. One member from each of the departments acts as a policy member, while the other participates as a legal member.

The committee meets at least two full days each week throughout the year. Proposed changes or additions to the ASPR are listed as cases on a formal agenda. Cases are generally initiated and forwarded to the committee for consideration by any of the members. However, other Government activities or, as a matter of fact, any source that has an interest in the material covered by the ASPR can forward proposals to the committee. The agenda items are reviewed in committee to insure that the purpose of each proposal is clearly understood and that the proposal has sufficient merit to warrant further study.

The ASPR Committee operates through a subcommittee system. When a proposal initially appears too complex for an immediate decision but seems worthy of additional study, it is sent to an ASPR subcommittee. This subcommittee is composed of representatives from each department and is generally chaired by the Service with the predominant interest in the particular issue. The subcommittee reviews all facets of the proposal and either recommends rejection or submits detailed coverage to the committee. Upon return of the subcommittee report to the ASPR Committee, each member is given the opportunity to review the proposal in detail and also to obtain comments from the operating people in his department to the extent he determines is necessary.

In this regard, each of the departments generally goes through rather intensive efforts to insure that field personnel are given an opportunity to comment in detail on the proposals. Within the Air Force widespread circulation of proposed changes is made to all major procurement organizations. The Air Force Logistics Command and the Systems Command are given the exact proposals while the other major commands are generally furnished the title of each proposal with a short synopsis. The Air Force coordination effort is somewhat more difficult than that of the other departments since no major Air Force procurement offices are located in the Washington area. However systematic paperflow of proposals and comments keep the ASPR representative informed of the field positions and, of equal importance, it keeps the field alert to the changes taking place in the procurement policy concepts within the Pentagon.

Over the past several years, this exchange of proposals and comments has been of inestimable value to the Air Force. It is our fundamental thesis that the first requirement for understanding the final policy is to participate in the formation and development rationale of that policy. The Air Force is certain that this systematic interchange between the Pentagon and the major buying activities during the formative stages of the ASPR is a major step in the direction of broad-based acceptance and understanding of the regulation.

We can assume that at this point the committee has received the subcommittee recommendations and reviewed them in detail with inputs from the operational procurement offices in the field. Detailed discussions of policy implications are now held between the ASPR Committee members and the subcommittee members who drafted the proposed regulation. After a period of time, which depends largely upon the complexity of the proposal, the committee will agree on the precise words and process the change for publication.

The Interface with Industry

The task of communicating procurement policy intentions and interpretations is as real to industry as it is to DOD. It is natural, therefore, to expect a considerable interface between industry and the DOD procurement policy system. DOD recognized this requirement and, therefore, agreed to the need to discuss major procurement policy changes with industry before the regulations became final.

The overall impact of industry on the ASPR as a result of this interface is difficult to assess. However there is no difficulty in recognizing the clear trend of the past two to three years of an ever-increasing and rather continuous exchange of information between Government and industry—all directed at the acknowledged common goal of a more useful procurement regulation.

While there are many channels for this exchange of information, this article will mention the three primary avenues.

- Defense Industry Advisory Council (DIAC). The DIAC is made up of senior executives of industry who act as advisors to DOD in the capacity of individuals rather than as representatives of firms, associations, or agencies. These representatives sit with senior DOD officials to review major policy problems and proposals across a wide spectrum. DIAC working groups, composed of middle management industry and Government representatives, frequently grow out of the problems discussed in the main DIAC meeting. Very often the results of the DIAC working group, after approval of the DIAC, are sent to the ASPR Committee as proposed changes to the ASPR. One example of a major ASPR policy which was forwarded to the ASPR Committee in this manner was the weighted guidelines and profit policy changes to ASPR 3–800.

- Industry Association Briefings. Approximately every quarter the ASPR Committee meets in the Pentagon with representatives of the major industry associations to discuss all cases under consideration by the committee. Prior to these meetings the associations are furnished lists of all active cases. During the meetings, which generally last about two hours, the committee members explain the purpose and status of each of the cases and answer questions from the industry representatives concerning the cases. The main purpose of these meetings is to furnish industry with timely and accurate status information and acquaint them with the objective of each case. With this information industry is in a better position to make meaningful contributions to the development of the regulation.

- Final Review of Proposed Change. The most formal, and perhaps the most fruitful, exchange of information involves the review by industry of all proposed ASPR changes of major policy. The committee sends the industry associations drafts of proposed changes which have been approved by the ASPR Committee and requests association comments within 60 days. The associations canvas their member companies, who represent a wide range of industry, and provide DOD with association papers which represent the composite view of their membership. These are evaluated in depth by OSD, the ASPR Committee, and by the Military Departments and DSA before a final decision on the proposal is made. In this manner the grass roots opinion from industry on all major policies under consideration is obtained just as we have done within the Services.

The Need for Flexibility.

Notwithstanding the need for a single regulation, flexibility still remains one of the essential characteristics underlying a successful procurement system. The ASPR reflects that characteristic. The ASPR establishes the broad policies and the procedures for carrying out these policies. While we seek to standardize the interpretation and implementation of these policies, it must be recognized that there will always be contracting situations that simply do not fit the model. Therefore, while the basis of the regulation is to provide a standard, it must also include a method to contract under unforeseen conditions. This flexibility is provided in ASPR 1–109 which is quoted in part below. While there have been occassional expressions that these provisions permit too much opportunity for individual procurement techniques, the record seems to bear out the observation that these provisions are not used often enough.

> "1–109 Deviations From This Regulation and Department of Defense Publications Governing Procurement.
>
> "1–109.1 *Applicability.* The ASPR is not intended to stifle the development of new techniques or methods of procurement. Innovations to attain desirable objectives will occasionally necessitate de-

viations from ASPR, and it is the responsibility of contracting officers to request such deviations whenever they are required in the best interest of the Government. For the purpose of this paragraph, a deviation shall be considered to be any of the following:

"(i) when a contract clause is set forth in ASPR for use verbatim, use of a contract clause covering the same subject matter which varies from the ASPR coverage, or use of a collateral provision which modifies either the clause or its prescribed application constitutes a deviation; however, in the case of a purchase or contract of an offshore contracting activity with a foreign contractor made outside the United States, its possessions, or Puerto Rico, such contract clauses may (subject to the direction of authority above the level of the contracting officer) be modified if no change in intent, principle, or substance is made (offshore contracting activities shall keep the cognizant unified Commander advised of significant deviations effected under this subparagraph (i));

"(ii) when a contract clause is set forth in ASPR but not for use verbatim, use of a contract clause covering the same subject matter which is inconsistent with the intent, principle and substance of the ASPR clause or related coverage of the subject matter;

"(iii) omission of any mandatory contract clause constitutes a deviation;

"(iv) when a Standard, DD, or other form is prescribed by ASPR or a Department of Defense Directive, use of any other form for the same purpose constitutes a deviation;

"(v) alteration of a Standard, DD, or other form (other than Departmental forms), except as authorized by ASPR or a Department of Defense Directive constitutes a deviation;

"(vi) when limitations are imposed in ASPR or a Department of Defense Directive upon the use of a contract clause, form, procedure, type of contract, or any other procurement action, including but not limited to the making or amendment of a contract, or actions taken in connection with the solicitation of bids or proposals, award, administration or settlement of contracts, the imposition of lesser or greater limitation constitutes a deviation; or

"(vii) when a policy, procedure, method, or practice of conducting procurement actions of any kind at any stage of the procurement process is covered by ASPR, any policy, procedure, method, or practice which is inconsistent with that set forth constitutes a deviation.

"1–109.2 *Deviations Affecting One Contract or Transaction.* Deviations from this regulation or a Department of Defense Directive which affect only one contract or procurement may be made or authorized in accordance with Departmental procedures *provided* (i) special circumstances justify a deviaton and (ii) written notice of such deviation is furnished to the Assistant Secretary of Defense (Installations and Logistics); and in the case of the Department of the Army, to the Assistant Secretary of the Army (Installations and Logistics), Attention: ASPR Policy Members; the Department of the Navy, the Chief of Naval Material, Attention: Code MAT 21C; Department of the Air Force, Director of Procurement Management, DCS/S&L, Attention AFSPM–AS; and the Defense Supply Agency, Executive Director, Procurement and Production, Attention: DSAH–PM. Such written notices shall be given in advance of the effective date of such deviations unless exigency of the situation requires immediate action.

"1–109.3 *Deviations Affecting More Than One Contract or Contractor.* Except as authorized in 1–109.2, deviations from this Regulation or a Department of Defense Directive will not be effected unless approved in advance by the Assistant Secretary of Defense (Installations and Logistics); *provided*, however, that unanimous approval by the members of the ASPR Committee will constitute approval of the Assistant Secretary of Defense (Installations and Logistics) of all matters except those involving major policy. Written requests for such approval will be submitted to the Assistant Secretary of Defense (Installations and Logistics) through the ASPR Committee as far in advance as exigencies of the situation will permit, or alternatively, at the option of the Materiel Secretary concerned, through use of the Materiel Secretaries' Weekly Conference."

OSD and the Communications Loop.

The ASPR Committee is now processing over 300 cases a year. Recently it underwent a soul searching exercise initiated by the Deputy Assistant Secretary of Defense for Procurement to analyze the operation and search for changes which might improve this workload of complex cases. Some changes were made, but they were more form than substance—and I think properly so. The subjects covered by the ASPR Committee are becoming more and more complicated by the very nature of the state of the art in procurement concepts. If the ASPR is to reflect accurately these changing concepts, it seems only reasonable that it will become a more complex document. In recognition of this, the departmental representatives attempt to establish the foundation for effective communication through the early coordination of the proposed changes with their field organizations.

Building on that foundation requires a knowledge not only of the regulations, but the concepts behind them. This article will mention two activities within DOD where resources are being applied to establish a complete understanding of the procurement regulations and so build on that foundation.

- Training. The management of procurement training by the Services is now centralized within the OSD under the Deputy Assistant Secretary of Defense for Procurement. One of the functions of that office is to establish the curriculum and the standards for procurement training throughout DOD. In addition, that office monitors the courses to insure that the precise policies being taught reflect the spirit and intent of DOD. It is interesting to note that industry representatives participate with DOD in determining the procurement training curriculum.

(*Continued on Page 10*)

Configuration Management in the Navy

by

Capt. William Seith, USN

The Navy has traditionally supported the concept in material acquisition that both the Naval user and the prime contractor are product co-managers. Configuration management, in the product management sense, has always been employed in the design-engineering-production activities of the engineer and the production manager. Interactions are coordinated with fleet and shore readiness requirements for material maintenance management, and program and inventory control support for supply management.

Although configuration management has been practiced in varying degrees within the Navy, the need for configuration management as a total discipline in the Navy is recognized and has been emphasized in the findings and recommendations of the Navy Logistic Support Task Force. The "Plan for Configuration Control" outlined specific program requirements for configuration management.

From this objective, there evolved a basic plan for the Navy's Configuration Management Program as promulgated in Naval Material Command Instruction 5000.6. This plan is to:

- Implement DOD policies and principles for configuration management within the Department of the Navy.
- Improve configuration management throughout the concept formulation, contract definition and acquisition phases of new Naval warfare systems.
- Establish controls of alterations and changes at all echelons and all phases of applicable functions.
- Develop and implement a system for effective total configuration management to provide complete, accurate and up-to-date configuration status accounting data files.
- Determine and maintain current configuration for new construction and inservice Naval warfare systems.
- Improve the coordination and processing of configuration changes, including waivers, deviations and design changes, between the Naval Systems Commands/Project Managers and the Navy Inventory Control Points (ICP's) in updating spare and repair parts toward achieving effective program and inventory control support.

It is anticipated that, in carrying out this plan, the Navy will be able to achieve the objectives of configuration management. These objectives have been variously stated by others but, for a fuller understanding of the Navy's plan, it is well to present them here. The objectives of configuration management in the Department of the Navy are to:

- Assist management in achieving required item performance, operational efficiency, logistics support and readiness by providing the necessary level of configuration identification, control and status accounting.
- Allow the maximum degree of design and development latitude, yet introduce at the appropriate time the degree and depth of control necessary for production and logistics support.
- Attain maximum efficiency in the management of changes with respect to the cost and timing of processing, content, evaluation, implementation and recording.
- Attain the optimum degree of uniformity in configuration management policy, procedures, data, forms and reports at all interfaces.
- Accomplish configuration identification, control and status accounting through maximum utilization of technical data and information acquired in other management areas and to provide a sound technical base for management decisions.

Capt. William Seith, USN, is Dir. of Configuration Management and Standardization on the staff of the Chief of Naval Material. Previous tours as an Engineering Duty Officer have included assignments on the Inspection and Survey Board; as Industrial Manager, 15th Naval District; and Supervisor of Shipbuilding, Conversion and Repair.

There is also a need for the positioning of configuration management in the Navy with other management improvement advances both in the Navy and DOD. A presentation on this positioning was made at the Los Angeles meeting of the American Society for Quality Control, Nov. 29, 1966. It was announced then that the Navy was preparing a manual for configuration management to provide visibility for this positioning and to describe the interrelationships.

The Navy's Configuration Management Manual will prescribe management procedures and implementing principles to be followed in effecting within the Department of the Navy established policies for configuration management of Navy material items. It will reflect all current policy issuances from higher authority affecting this area of operation throughout DOD. Further it will reflect Navy policy issuances still in effect and support those on-going Navy programs which are to be continued and intensified.

A draft manual is essentially completed for coordination purposes within the Navy and recommendations leading toward a final document. It is anticipated that the final review will be accomplished in early 1967.

The format of the Navy's configuration management manual is as follows:

Glossary of terms.

Table of Contents.

I. Introduction.

II. Policy, Relationships and Responsibilities.

III. General Information and Life Cycle Coverage.

IV. Configuration Identification.

V. Configuration Control.

VI. Configuration Status Accounting.

VII. Audits.

VIII. Contract Provisions.

The first three sections provide an introduction to and background for

NAVY CONFIGURATION MANAGEMENT LIFE CYCLE INTERFACE NETWORK

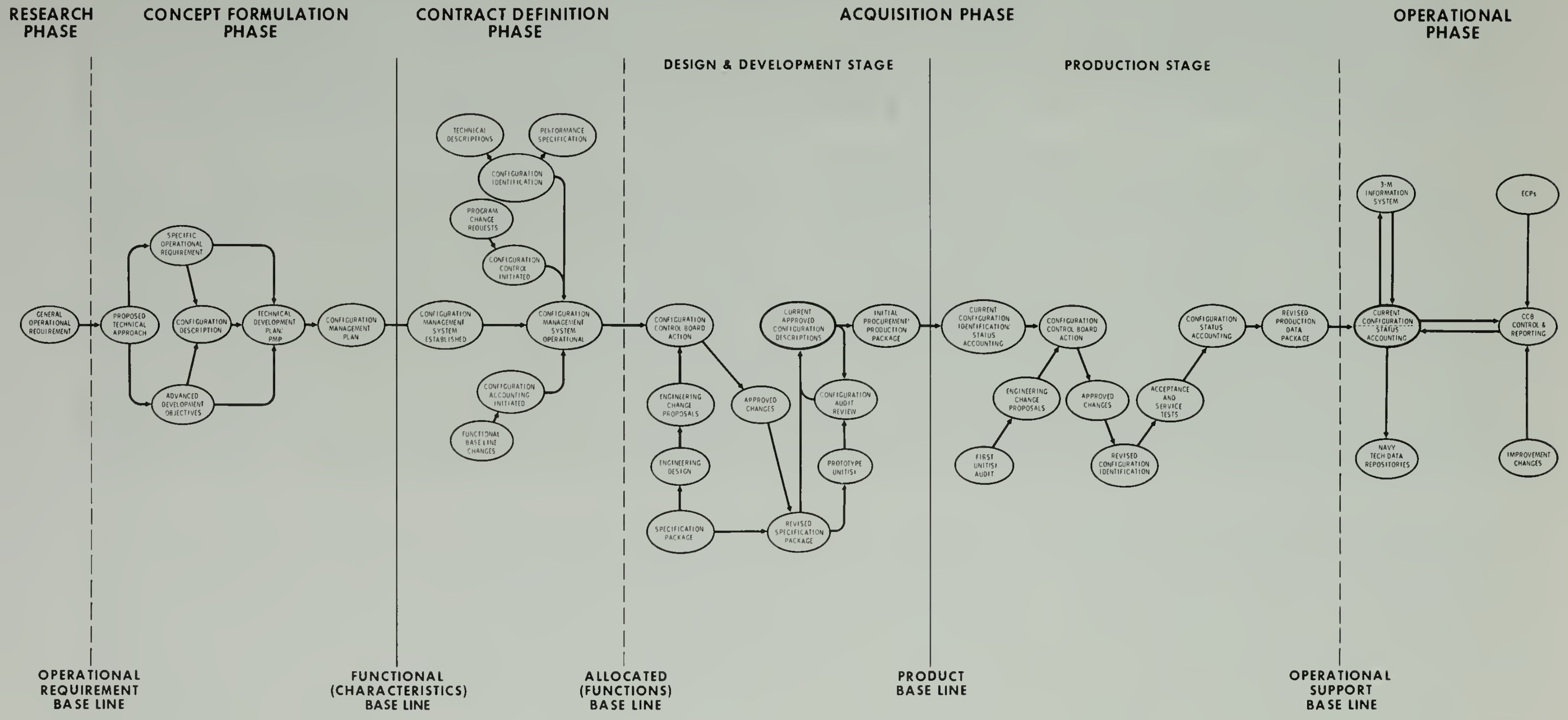

RESEARCH PHASE
CONCEPT FORMULATION PHASE
CONTRACT DEFINITION PHASE
ACQUISITION PHASE
OPERATIONAL PHASE
DESIGN & DEVELOPMENT STAGE
PRODUCTION STAGE
GENERAL OPERATIONAL REQUIREMENT
PROPOSED TECHNICAL APPROACH
SPECIFIC OPERATIONAL REQUIREMENT
CONFIGURATION DESCRIPTION
ADVANCED DEVELOPMENT OBJECTIVES
TECHNICAL DEVELOPMENT PLAN/ PMP
CONFIGURATION MANAGEMENT PLAN
CONFIGURATION MANAGEMENT SYSTEM ESTABLISHED
TECHNICAL DESCRIPTIONS
PERFORMANCE SPECIFICATION
CONFIGURATION IDENTIFICATION
PROGRAM CHANGE REQUESTS
CONFIGURATION CONTROL INITIATED
CONFIGURATION MANAGEMENT SYSTEM OPERATIONAL
CONFIGURATION ACCOUNTING INITIATED
FUNCTIONAL BASE LINE CHANGES
CONFIGURATION CONTROL BOARD ACTION
ENGINEERING CHANGE PROPOSALS
ENGINEERING DESIGN
SPECIFICATION PACKAGE
APPROVED CHANGES
REVISED SPECIFICATION PACKAGE
CURRENT APPROVED CONFIGURATION DESCRIPTIONS
CONFIGURATION AUDIT REVIEW
PROTOTYPE UNIT(S)
INITIAL PROCUREMENT/ PRODUCTION PACKAGE
CURRENT CONFIGURATION IDENTIFICATION/ STATUS ACCOUNTING
CONFIGURATION CONTROL BOARD ACTION
ENGINEERING CHANGE PROPOSALS
FIRST UNIT(S) AUDIT
APPROVED CHANGES
REVISED CONFIGURATION IDENTIFICATION
ACCEPTANCE AND SERVICE TESTS
CONFIGURATION STATUS ACCOUNTING
REVISED PRODUCTION DATA PACKAGE
3-M INFORMATION SYSTEM
CURRENT CONFIGURATION STATUS ACCOUNTING
NAVY TECH DATA REPOSITORIES
ECPs
CCB CONTROL & REPORTING
IMPROVEMENT CHANGES
OPERATIONAL REQUIREMENT BASE LINE
FUNCTIONAL (CHARACTERISTICS) BASE LINE
ALLOCATED (FUNCTIONS) BASE LINE
PRODUCT BASE LINE
OPERATIONAL SUPPORT BASE LINE

Figure 1.

configuration management in the Navy; policy, relationships with other programs, and the designation of management responsibilities to the Headquarters, Naval Material Command, the Designated Project Managers, the Systems Commands (Air, Electronics, Ordnance, Ships, Facilities, and Supply), and the Navy operating forces.

Information on the basic plan for Navy configuration management is presented as dependent upon other functional management areas. The concept of base line management is reinforced in the manual through life cycle interface networks. The need for flexibility in base line management is recognized for adaptation to a particular project, to product management, and to the method of acquisition of Naval material items and their stage of life.

An abbreviated presentation of the activity of configuration management and its influence on other functional areas is made in the Navy Configuration Management Life Cycle Interface Network, Figure 1. The network also traces the various base lines as arranged in an orderly pattern in accordance with their phase relationship. Base line management is achieved by developing the functional characteristics and technical descriptions of a Navy material item at designated points in its life cycle through the use of uniform documentation engineering control. The employment of the base line technique ensures an orderly transition from one major commitment point to the next in the system engineering process. The base lines serve as engineering reference points and represent the progressive and evolutionary development of specifications, engineering drawings, associated lists, and related technical and management data. The documentation forms a base line technical description that, when joined with documentation of all approved changes subsequent to the base line, provides the approved current configuration identification of the item. A base line technical description includes only a selective position of the total data that has been determined necessary for configuration identification, control and status accounting. Necessary configuration changes, together with additional selections or deletions of data, make up the current configuration identification. The network traces configuration management and the more significant interfaces from inception in the research phase to continuation in the operational (use) phase. The network also introduces the following base lines and their phase relationships:

- Operational requirement base line.
- Functional (characteristics) base line.
- Allocated (functions) base line.
- Product base line.
- Operational support base line.

Throughout the manual considerable emphasis is placed on the dependence of configuration management upon other functional management areas. The technical data and information required for configuration management must constitute, to the maximum possible extent, an integrated, non-redundant portion of the total technical data requirement. (Refer to the *Defense Industry Bulletin*, June 1966, "Navy Authorized Data List—A Management Technique".) The objective of DOD to acquire most economically the minimum amount of data needed to procure and support military systems, materials and services will be supported by this integration.

Relationships to Other Navy Programs.

The operating relationships between configuration management and several other programs are recognized and the configuration management procedures set forth in the Navy's manual are to be compatible with them. Some of the more prominent programs in the Navy having management interface with configuration management are:

The Total Development Plan Concept—An anticipated consolidation of the requirements of the Technical Development Plan and the Project Master Plan. This concept emphasizes the delegation of management authority rather than top level detailed control. A tight discipline of configuration management, first of performance and then of physical characteristics, is required to support such a concept.

The Standard Navy Maintenance and Material Management (3–M) Program—A program to improve the material readiness of the fleet through improved management of maintenance and material functions. A necessary inclusion in the manual is the development of requirements and procedures for reporting fleet and field configuration change reporting via the 3–M Maintenance Data Collection System (MDCS) for ultimate integration into designated master configuration files of the Naval Systems Commands or Designated Project Managers.

The Navy Logistic Support Improvement Plan—Contains objectives having significant relation to standardization/configuration management. These include the development of means to increase standardization of ship types and equipments in the shipbuilding program. Standardization planning will provide for the:

- Use of a minimum of sizes, types, varieties and kinds of components, equipments and parts.
- Use of identical components and equipments wherever complete functional interchangeability exists.
- Re-use of reliable, in-use components/equipments supported by repair parts currently in the supply system.

Configuration elements will be included and rigidly controlled in Master Configuration Listings. The configuration management plan is to include procedures and criteria for thorough evaluation and demonstration of the cost effectiveness of proposed alterations, improvements, or other engineering changes. The Navy Configuration Management Program provides for the development and maintenance of uniform policies, procedures, and implementing principles for the attainment of these objectives.

Integrated Logistic Support—Established by DOD Directive 4100-35, it is defined as a composite of the elements necessary to assure the effective and economical support of a system or equipment at all levels of maintenance for its programmed life cycle. Logistic elements include all resources necessary to maintain and operate an equipment or weapon system, and are categorized as follows: planned maintenance, personnel, technical logistic data and information, spares and repair parts, support and test equipment, facilities, and contract maintenance. A major benefit will be achieved in the integrated logistic support area by procedures for concurrent consideration of configuration changes to material items and to the related technical data, operating computer programs, spares/repair parts, training devices/equipment, support/test equipment, maintenance/repair procedures and tooling.

Naval Warfare System Engineering Integration—A process of forming into one complete functional system two or more functionally related weapon system segments that have electronics, electrical, mechanical, structural, facility, or other engineering interfaces between them for the complete warfare system. The manual provides for the initial preparation and continued maintenance of configuration identification: for example, interface control drawings, coordination drawings, and master configuration lists; the control of engineering (design) changes affecting system performance of inter-system interfaces; and the establishment of corelated data elements for configuration status accounting records.

Preview to Configuration Management Manual

A preview of the procedural sections of the manual follows:

Section IV, Configuration Identification, of the manual presents configuration management exercised through the utilization of progressively more detailed identification in the form of base line technical descriptions. For every item, there shall be a configuration identification that, at the start of development, will specify the required functional and physical chcaracteristics and, after delivery, describe those characteristics as achieved. The initial technical descriptions are the base lines of configuration management. The base lines and all approved changes thereto are an item's current configuration identification.

Two identification base lines are mandatory, the functional base line and the product base line. Other additional base lines are termed operational requirements, allocated (functions), and operational support, of which the latter may include product improvement.

On a continuing basis, the completed physical and functional characteristics, as amended to reflect in-service changes/alterations/improvements (the operational support base line), will be established through the operating (use) phase of the item.

The preparation of configuration identification, i.e., the technical descriptions, will be consistent with the development / production / operational use pattern of the involved Navy material item, and the descriptions will meet the following criteria:

- For new Naval warfare systems and major projects, complete technical descriptions will be prepared for each of the appropriate base lines outlined in Figure 1 and to the base line technical description requirements.
- For Naval warfare systems and major projects now in engineering and operational systems development, the technical descriptions will be prepared to the functional base line. The functional (characteristics) base line normally results from the concept formulation phase and generally will require complete follow-on technical descriptions similar to those for a new system/project.
- For Naval warfare systems and major projects now in production, the product base line will be the first base line to be established. The technical descriptions for the product base line will include those appropriate general, detail, performance, or design specifications, engineering drawings, data lists, test procedures and other data that define the physical and functional characteristics of the item at the beginning of production, together with all approved changes since production initiation. Such technical descriptions may not be the complete descriptions as called for under new or partial development, but must be adequate to provide a basis for configuration audit and configuration status accounting.
- For Naval warfare systems and major projects in operational use and out of production, only the operational support base line will be established at this point of the life cycle. The technical descriptions for the operational support base line will depend on the existence or necessary reconstruction of technical data to provide the identification

Section V, Configuration Control, requires that configuration control shall be exercised at all echelons of command in the Navy. The configuration of items will be managed by controlling changes to the current configuration identification that describes the functional and physical characteristics of the items. All affected activities will participate in consideration of both proposed base lines and of all proposed changes from those base lines throughout the life cycle of the item.

All new Navy change control programs will be implemented to ensure control over configuration identification and to maintain configuration status accounting in accordance with the policies, procedures and implementing principles of the manual. Existing change control procedures will be reviewed and revised as necessary to ensure compliance with the manual.

Section VI, Configuration Status Accounting, requires that reporting and recording for configuration management include delineation of the mandatory base line, status of proposed changes to the base line, effectivity and status of implementation of approved changes, and delineation of the item's current configuration identification. Data records will be maintained in a manner ensuring the continued visibility needed to manage the configuration effectively. Records shall be automated only when the volume of data recorded or the information retrieval response time required for configuration accounting makes automation economically feasible and desirable. Data record complexity will be consistent with configuration identification and may be established to varying formats as required by the functional or project manager, provided that the following objectives are fulfilled:

- Standard data elements are used for attainment of an optimum degree of uniformity in status accounting procedures, data, forms and reports at all interfaces with industry, and between internal organizational segments of the Naval systems commands, Chief of Naval Material designated project managers, and Navy offices.
- The configuration status accounting program, as established, is consistent with the intended needs, cost and complexity of the applicable hardware.
- The configuration status accounting records will provide the necessary information within an allotted time frame to the appropriate manager or engineer to permit effective engineering, logistic support and management decisions.

Section VII, Configuration Audits, requires that appropriate levels of command shall ensure by audit that the functional and physical characteristics achieved in an item match those specified in the item's configuration identification. First Unit Audits, Technical and Operation Evaluations, Board of Inspection and Survey Trails, and Production Demonstration and Acceptance are typical audits. Due to the wide variety

(Continued on Page 12)

"Share in Freedom" Bond Program Recommended to American Industry

Have you taken a long, hard look at Payroll Savings in your organization lately?

There is no better time than now, for the Treasury's Savings Bonds Program has a new look.

President Lyndon B. Johnson launched the 1967 "Share in Freedom" Bond Campaign with the announcement of a companion Savings Note, popularly called a "Freedom Share." The President's announcement was made on a nationwide, closed-circuit telecast from Washington to meetings of some 10,000 Savings Bonds volunteers in 32 cities. The meetings were held to announce plans for this year's intensive sales campaign in April and May.

Freedom Shares, which will go on the market on May 1, will be sold only in combination with sales of Series E Savings Bonds, through regular Payroll Savings and Bond-a-Month Plans.

The new security earns 4.74 percent interest when held to maturity—four and one-half years. It must be held for one year before it can be cashed.

Series E Bonds continue to earn 4.15 percent interest when held to maturity—seven years.

Freedom Shares will be sold in four denominations—$25, $50, $75 and $100—with purchase prices of $20.25, $40.50, $60.75 and $81, respectively. There will be an annual limitation on holdings of $1,350 face value, and Payroll Savings deductions are limited to $20.25 per weekly pay period, $40.50 per biweekly pay period, or $81 per monthly pay period.

With an investment of $39 for the smallest Bond/Share combination, a purchaser can get back $50—half in four and one-half years, the other half in seven years. The combined yield of the two securities, if each is held to full maturity, is 4.39 percent.

In introducing the Freedom Share—a temporary addition to the Savings Bonds "line"—President Johnson said:

"Freedom must be at all times defended, because it is at all times besieged. Not all of us are called to fight on the battlefield. Many of us must quietly and firmly do what we can and all that we must here at home. Buying Savings Bonds, regularly, is as important to this nation in the long reach of history as almost anything we can do.

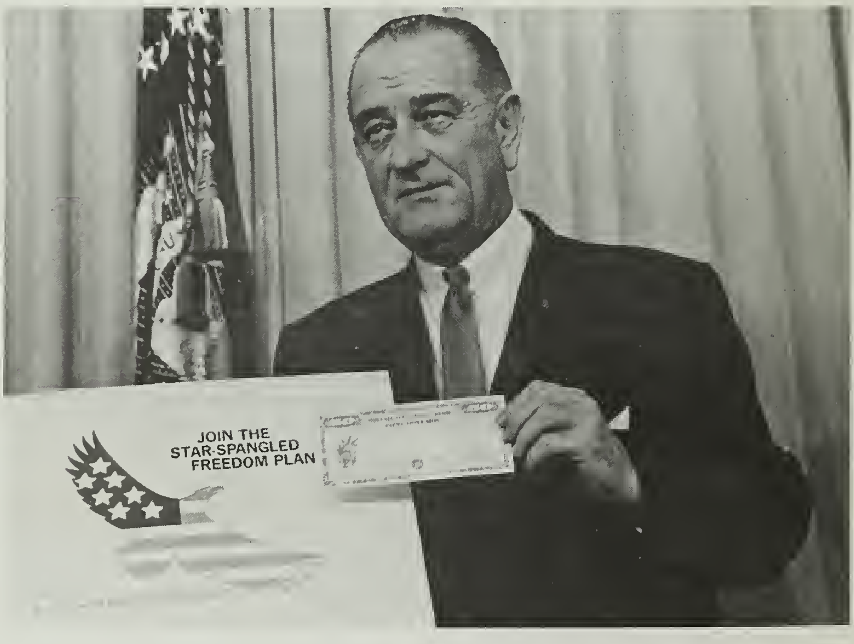
"We can do no less than those who fight and die for our freedoms. Last year, American servicemen bought almost $350 million worth of Savings Bonds—close to $90 million in the last quarter alone. Battle honors come hard in Vietnam, because the price of honor is often the price of life. Yet in jungle and hamlet—on shipboard and airfield—there is one trophy that every American unit prizes. It is not the enemy's flag. It is the Minute Man Flag that symbolizes 90 percent or better participation in the Payroll Savings Plan.

"Throughout Vietnam, there are scores of units who fly those flags for all our countrymen to see. I have seen them in Vietnam. They are declarations of our faith, and they declare that we are still the people that the poet saw—with 'The flash of freedom in their souls and the light of knowledge of their eyes.' "

The President's personal interest in the Bond Program is well evidenced by the payroll savings participation rate of White House employees—100 percent.

The Savings Bonds Program enjoys top-level support in both Government and industry. Postmaster General Lawrence F. O'Brien is chairman of the Interdepartmental Savings Bonds Committee. Daniel J. Haughton, President of Lockheed Aircraft Corp., is chairman of the 1967 Industrial Payroll Savings Committee. Labor, too, gives the program strong backing. George Meany, President of the AFL/CIO, is spearheading labor's participation.

Industry's goal in this year's campaign is 2,500,000 "Payroll Patriots" who will join the Payroll Savings Plan or increase their current allotment for Savings Bonds.



President Lyndon B. Johnson announces Freedom Shares.

The campaign brochure of the U.S. Industrial Payroll Savings Committee stresses "opportunity," pointing out that:

"The Payroll Savings Plan for U.S. Savings Bonds offers your employees a way to build personal security in one of the world's safest investments. But more than that, it offers you and your employees a way

—to help MAINTAIN the strength of the dollar

—to EXPRESS patriotism in an effective way

—to BACK our free enterprise system."

Heads of companies, both large and small, which have successful Payroll Savings Plans, find these to be the chief advantages:

- **Systematic Savings.** The Payroll Savings Plan is an effective way for employees to save for the future—easy, systematic thrift through which savings build automatically into substantial reserves. These reserves will guarantee families more security and can be a foundation for personal financial planning.
- **Patriotism.** Employees reaffirm their faith in our country when they buy bonds. They become shareholders in America's future.
- **Tax Advantages.** Interest earned on Savings Bonds and Freedom Shares is exempt from state and local income taxes. Payment of Federal income tax on E Bond and Freedom Share interest may be deferred until redemption. The result is increased effective return on the investment.
- **Economy and Safety.** There is no charge for buying or redeeming U. S. Savings Bonds and Freedom Shares. They are registered in the owner's name and are replaceable at no charge if they are lost, stolen, or destroyed. They may be issued in the owner's name, or with a co-owner, or with the name of a beneficiary.
- **Ready Cash.** Employees can meet short-term financial needs without withdrawing at a disadvantageous time from long-range commitments. Although the new Freedom Shares must be held a full year, E Bonds may be redeemed at any time after two months from the date of issue. Savings Bonds are not affected by fluctuations of the market.

Business leaders find company benefits too:

- **Team Spirit.** A company-wide Savings Bonds campaign builds team spirit—a valuable asset to any company. There is no better way to make an employee genuinely feel a part of the team than working directly with him toward a better, more stable future for him, his company and his country.
- **Employee Morale.** Employees with financial stability tend to be better workers. More free of financial problems than those who don't save, payroll savers can concentrate on their jobs.
- **Debt Management.** Savings Bonds are a key element in sound management of a public debt. Over $50 billion—23 percent of the publicly held portion of the debt—are in Series E and H Savings Bonds.
- **A Bulwark for Free Enterprise.** The Savings Bonds Program, built around industry support of the Payroll Savings Plan, works for a strong, stable dollar—the foundation of the American free enterprsie system and of the strength of our nation.

Campaign Chairman Haughton believes that success in Payroll Savings starts with top management support. In his words, "There are several steps to running a successful campaign, but there is one overriding thing it must have all the way to be a success, and that is the personal, enthusiastic support of the top management in the company. If it does, it will filter down through the entire organization, and can't miss."

Secretary of the Treasury Henry H. Fowler congratulates Daniel J. Haughton (left), President, Lockheed Aircraft Corp., on appointment as Chairman, 1967 Industrial Payroll Savings Committee. Looking on is the outgoing chairman, Lynn Townsend (center), Chairman of the Board, Chrysler Corp.

1966
Honor Roll Defense Contractors U.S. Savings Bonds Program

(Percentage of Employee Participation)

Lockheed Aircraft Corp.	99%
Radio Corp. of America	95
Kennecott Copper Corp.	94
Ling-Temco-Vought, Inc.	90
Republic Steel Corp.	88
United Aircraft Corp.	88
ARO, Inc.	83
Marquardt Corp.	82.5
Gulf Oil Corp.	82
American Machine & Foundry Co.	82
Martin-Marietta Corp.	82
Aerojet-General Corp.	80
Northrop Corp.	79
Chrysler Corp.	78
Boeing Co.	78
McDonnell Aircraft Corp.	78
International Telephone & Telegraph Corp.	78
North American Aviation, Inc.	77
Texas Instruments, Inc.	75
Aerospace Corp.	75
Ryan Aeronautical Co.	72

Republic Aviation Corp.	70
Blaw-Knox Co.	69
General Motors Corp.	69
General Electric Co.	68.9
Raytheon Corp.	68
Kelsey-Hayes Co.	67
Firestone Tire & Rubber Co.	65
Western Electric Co., Inc.	65
General Dynamics Corp.	63
Douglas Aircraft Co., Inc.	63
E I. DuPont DeNemours & Co.	62.9
Thiokol Chemical Corp.	62
Remington Arms Co., Inc.	62
Whirlpool Corp.	62
Aluminum Co. of America	62
Goodyear Tire & Rubber Co.	61
United States Steel Corp.	59
Beech Aircraft Corp.	58
Bendix Corp.	58
TRW, Inc.	55

THE SECRETARY OF DEFENSE
WASHINGTON

April 3, 1967

Dear Defense Contractor:

The Treasury Department will, within a few weeks, launch the most vigorous Savings Bonds Campaign since the end of World War II.

The importance of the Savings Bonds Program has been underscored many times in the past by President Johnson. Just recently he announced a new Treasury Security, popularly known as the Freedom Share, which will earn 4.74 percent interest when held to maturity of four and one-half years. This new Freedom Share will be available only in combination with the Series E Bond.

I am aware of the outstanding efforts on the part of defense contractors in promoting employee participation in the Payroll Savings Plan. Many contractors have achieved 50 to 75 percent or more employee participation in this most successful thrift plan.

Increased Savings Bonds sales at this time will help greatly to strengthen our national economy and to support our fighting men in Vietnam. I am proud that many of our military units in Vietnam are flying the Minute Man Flag denoting 90 percent participation.

Your cooperation is needed to make the Freedom Share Campaign a success. Please give serious consideration to conducting a personal canvas of all your employees.

The Savings Bonds Division of the Treasury Department has available free promotional materials and will assist you in planning and conducting a campaign among your employees.

Thank you.

Sincerely,
Robert S. McNamara

JOIN

THE

PAYROLL SAVING

PLAN

Development of Procurement Policy

(*Continued from Page 3*)

• **Procurement Management Survey.** Along with the training function, OSD has developed a DOD procurement management survey system. While these procurement surveys are managed and conducted by the separate Services, the overall policy control for the system rests in OSD. In this manner the standards of review are established for all the Services at a single point. The survey teams include skilled technicians who know the DOD policies in each area and can recognize when they are being misinterpreted. Among other things, these teams evaluate how effectively the procurement organizations are implementing the regulations and policies which were established for compliance throughout DOD. They look for the causes and the cures if there are deviations from the standards. Further, once their findings have been furnished to the procurement staffs in Washington, the "policy loop" has been closed.

Procurement policy making at its best is a difficult task. It is beset by problems of vast distances, a wide range of participants, and a generous share of dissenters. There is clear recognition today that the ASPR is only the first part of the policy-making loop. If it is to continue to be a meaningful and successful document, there must be a continuous and intelligent application of resources to insure that the words and spirit are understood by industry as well as Government, and that deviations from the standards are isolated and analyzed.

Today, with increasing emphasis on closing every part of this loop, I think that there is ample reason for optimism.

Naval Terms Dictionary Available

The second edition of "Naval Terms Dictionary" has been published by the U.S. Naval Institute, Annapolis, Md.

The new revised edition has been greatly expanded to include hundreds of new terms covering many branches of modern naval endeavor.

The 377-page dictionary is broken down into four sections: terms, aircraft designations, enlisted ratings and ship designations.

The dictionary can be purchased for $5.50 from the U.S. Naval Institute, Annapolis, Md. 21402.

SecDef McNamara Cites Progress of DOD Small Business Program

[The following is the statement of Secretary of Defense Robert S. McNamara before the Select Committee on Small Business of the U.S. Senate made on March 14, 1967.]

When I appeared before this Committee on April 25, 1961, I stated:

> **"Based upon my former association with a very large company, I am well aware of the advantages which a competent small business can offer its customers. A good, small firm can provide flexible and responsive engineering, low administrative costs, and first-rate products."**

This is still my opinion and the record of the Defense Department in increased awards to small firms both at prime and subcontract level reflects that we have done something about it. As a result the small business community has received a substantial increase in the percentage of prime contract awards as compared to the total value of all prime contracts. This is shown in the following table:

Prime Contract Awards
to Small Business

Year	Percentage
1961	16.3
1962	18.2
1963	16.5
1964	18.0
1965	20.3
1966	21.8

Small business firms have also received an increase in the percentage of subcontract awards as compared to the total value of subcontracts awarded by our primes. This is shown in the following table:

Subcontracts Awarded
to Small Business

Year	Percentage
1961	37.2
1962	38.0
1963	38.0
1964	39.1
1965	41.5
1966	41.9

Secretary of Defense Robert S. McNamara with (left to right) Senator Joseph R. Montoya (D., N.M.), Chairman, Subcommittee on Government Procurement, and Senator George A. Smathers (D., Fla.), Chairman, Senate Select Committee on Small Business, following his appearance before the Committee, March 14, 1967.

I would like to make a few brief observations concerning the Government's overall objective in sponsoring a small business program. It is my view that the objective of the Federal Government—through all of its Executive Agencies—should be to encourage the initiation of new enterprises and follow policies that foster growth during the early critical years in the life of the business. Each business should know that it can take this risk without the fear of being "squeezed out" by giants of industry, and that our Government will provide reasonable safeguards to protect it from unfair competition. Obviously, this is not the job of any one agency, but that of many agencies. In the Defense Department we contribute in several ways.

- We set aside contracts for exclusive competition among small business concerns.
- We maintain a staff throughout the country whose efforts are devoted to assisting, counseling and, on occasion, "standing up for" small business firms.
- We do our best to see that small firms get a fair proportion of defense work.

Whether we always make a useful contribution by the mere award of a contract is obviously open to question. As you know, not all contracts are profitable. Hence an over-zealous program of seeking out contracts to be awarded to small business concerns involves the risk of doing more harm than good in selected instances. We believe in providing opportunities—not subsidies. We have a strong conviction that in working toward better defense programs, we should deal only with responsible prospective contractors—whether they be large or small. Contract awards to concerns of marginal capabilities can lead only to delays or failures to obtain delivery of needed items and to higher ultimate costs to the Government. Importantly, the Armed Services Procurement Regulation requires an affirmative determination that the prospective contractor is responsible before any contract award may be made; there must be a positive judgment that he will perform the contract on schedule in accordance with its terms. This excludes the company whose qualifications are substandard as to production capacity, financial capability, or past performance.

I am sure that there is, in general, little disagreement over the importance of adhering to this principle. Small Business Administration and Defense Department representatives follow it in actual practice. I am glad to report that we have a very fine relationship in this regard.

I should like to make one additional observation. Any society which limits the opportunities for economic activity by the individual will be losing a good deal of ability and talent. It is important in a free enterprise economy that the centers of initiative be increased and the supply of enterprises ensured. We all are familiar with cases where small firms with new and imaginative ideas have come up with products which made our big systems work. The fact that individual citizens have the opportunity to put their ingenuity to work benefits us all.

Configuration Management in the Navy

(*Continued from Page 7*)

of Navy material items and the diversity of their mode of entry into the defense inventory, the depth and timing of these audits will vary. Audit requirements will vary depending on the item's work breakdown structure level and the specific base line in the life cycle at which the audit is accomplished.

The three generic types of defense material that will predicate a specific pattern for configuration audit are:

- Items developed at Government expense in meeting military requirements or items developed under Government specification.
- Items carried through engineering development at private expense under private specification.
- Commercial items, including those developed completely at private expense.

The majority of audits scheduled prior to hardware availability will be accomplished at the particular point in the item's life cycle identified as its functional base line (see Figure 1). The technical description at this base line is the definitive initial statement of the functional characteristics of the applicable item.

The hardware and its achieved functional characteristics will be audited against the technical description, which records the needed physical and functional characteristics. It is recognized, however, that a total weapon system, and its system segments, are frequently too complex to permit auditing as a whole all of their physical and functional characteristics. Accordingly, these may be audited by conducting individual audits of the lower breakdown structure elements. In such cases, physical inspections and functional tests of the lower level elements will be supplemented by necessary higher level technical reviews and demonstrations such as system operability tests, technical approval demonstrations, or performance checkouts.

Section VIII, **Contract Provisions**, requires that appropriate provisions for configuration management shall be included in all contracts or in-house equivalents for the development, production, modification and maintenance of Navy material items. In these provisions, consistency of configuration management objectives and procurement practices must be maintained in accordance with the manual.

Configuration management, as a concept and a discipline, will be applied in accordance with the provisions of the manual to all relevant Navy material items or configuration elements being newly procured for use by DOD, through either a contract or an internal agreement with in-house capability. It will also be applied to those Naval warfare systems already in the Navy operational support inventory, on which case-by-case decisions shall be made, based on the availability of resources and the proven need for configuration management improvement. In any case, its application will be carefully tailored to be consistent with the quantity, size, stage of life cycle, nature, and complexity of the item involved.

Film on USAF Contractor Performance Available

"Air Force Contractor Experience List," a 20-minute 16mm black and white film which explains the Air Force's program for identifying contractors who are performing unsatisfactorily, is now available on a loan basis.

The identification program described in the film was implemented to give substance to the Defense Department policy of insuring that Government activities deal only with fully qualified and capable suppliers.

Loan requests for the film should be submitted to the Director of Procurement Policy, Headquarters, U.S. Air Force, Attention: Colonel Clifford Taylor, AFSPDPA, Room 4B252, The Pentagon, Washington, D.C. 20301.

Disposition of Program Material Explained

Contractors frequently seek clarification concerning the application of paragraph 5k, Industrial Security Manual for Safeguarding Classified Information (ISM) (Attachment to DD Form 441), in connection with disposition of classified material related to a contract, program, or proposal.

One question often raised is at what point in time do the provisions of paragraph 5k apply to the classified material related to a user agency program. Another is whether or not paragraph 5k applies to superseded classified program documents of a program that is still in progress.

The provisions of paragraph 5k would apply when the contractor's participation in the particular program is ended, either through his action or that of the user agency concerned. In such case, it is up to the user agency, which furnished the classified material, to provide the contractor with disposition instructions and to advise the cognizant security office of that fact. If the contractor does not have disposition instructions, the contractor must either destroy the material or obtain retention authority.

In the case of superseded classified documents pertaining to an active program, the contractor is required to do one of the following: destroy the material in accordance with paragraph 19, ISM; request authority to retain it in accordance with paragraph 51, ISM; or return the material when requested by the user agency concerned. Where the user agency specifically directs the destruction of a superseded edition of a classified document, such as by a notation on the latest edition, the contractor shall destroy the classified material.

Retention authority is not granted for an "indefinite" period of time.

AVCOM To Hold Briefings for Industry

More than 700 guests from the aviation and associated industries and the Federal Government are expected to be on hand for the second annual Army Aviation Materiel Command (AVCOM) Advance Planning Briefing for Industry, June 19–21, at the Chase Park Plaza Hotel, St. Louis, Mo.

The event is being co-sponsored by AVCOM and the Lindbergh Chapter of the Army Aviation Association of America (AAAA). Gene Loveland, Lycoming Technical Representative, is general chairman of the briefing again this year.

The entire session this year will be classified Confidential. The Army Electronics Command is expected to participate with presentations on avionics.

Contract Administration Problems

by

James A. Walsh

A few generations ago when life seemed simpler, the word "problem" was suggestive of mathematical procedures subject to objectively precise solution. Before the "new math," folks considered that two plus two equalled four and that this was pretty much the way things should be. One could expect that by the use of time-tested formulae, one could have answers nicely packaged with no loose ends or complications.

Nowadays, we tend to be more complex in our mental processes, living as we do in an era dominated by the teachings of Freud, Jung, Adler, their disciples and doctrinal descendants. In our epoch, many people seek guidance from their analysts more frequently than from their ministers, priests, or rabbis, and we tend to view everything from the subjective aspect so that the word is considered more as Webster now defines it: "a source of perplexity or vexation."

The manner by which contracts, born as normal children of a meeting of the minds of industry and Government, quickly grow into monsters is, as Anna's King of Siam would say, a puzzlement. The dockets of the various Federal contract adjustment boards and courts bear strong support to the suspicion that there are almost as many administrative problems, Government vis-a-vis industry, as there are contracts. Although not every Government contract is a step on the high-road to litigation, the percentage of those which do go to dispute is alarming.

Yet, it is not too extravagant an oversimplification to say that the Administration Contracting Officer (ACO) has only two problems once the instrument is executed. He wishes to obtain the product called for and to receive it on time. Oddly enough, the supplier has but two problems: to make the item in accordance with drawing and specification requirements, and to get the Government to accept (and consequently pay for) it. Very optimistically, it might be said that if we can solve these, we have removed the most prolific source of ulcers in Government-industry relations. It would be nice if it were possible to make such an excision, using only the scalpel of common sense.

Those masters of political wisdom whom we call our founding fathers had a clarity of vision given to few to aid them in drafting the instruments declaring our freedoms and preserving them in our Constitution. In following their guidance with respect to military matters, we have avoided domination by military castes and by munitions-making cartels. In all of our conflicts, American industry has enabled our Armed Forces to meet the challenges of supply and logistics; not always with outstanding ease or facility since the periodic necessity of changing to a posture of defense from one of peace is necessarily more difficult to a democratic nation to which large standing armies and private "merchants of death" are abhorrent.

It is also repugnant to our democratic principles to permit excessive profits to be made from defense supply so that profits for most types of contracts are limited by statute and regulation. By the same token, it is very much consistent with American ideas of free enterprise to permit fair profits in return for performance. While defense contractors generally are moved with motives of patriotism since, in many cases, profits in private business can be much greater, they must necessarily be interested in monetary rewards if they wish to survive. It can be fairly stated, then, that the defense contractor and the Government meet at arm's length but in an atmosphere of good will in approaching contract execution.

James A. Walsh is Asst. Chief Counsel for Procurement Law at the U. S. Army Munitions Command, Dover, N. J. He has had 20 years of Government service in previous assignments as Procurement Chief, Contracting Officer, and Counsel with the Picatinny Arsenal. He holds A.B. and LL.B. degrees from Fordham University. He was admitted to the New York Bar in 1936 and practiced law in New York until 1943.

The first step is the Government's. The Procurement Contracting Officer (PCO) must make known to prospective bidders, by clear and unequivocal drawings and specifications, what he wishes to buy and to state when and where he desires that it be delivered. Simple? It would seem so. Each of the bidders, one of whom will become the contractor, must study the drawing carefully, decide how to make the item, make up and price his bill of material, line up his subcontractors, add his labor and other costs, overheads and, most important, profit. If he is the lowest responsible bidder, he receives the award. Nothing to do but perform and collect the dough.

Unfortunately, it is most discouraging how many pitfalls lie in the path of the contracting officer and the prospective contractor in taking the few steps we so blithely described as simple. In far too many instances the documents have barely arrived at the desk of the ACO when there are already stirrings of unease. The triumphant recipient of the award now gives to the drawings and specifications that cold, hard look which they should have received before the bid was made. He finds, for example, that the metal specification on a vital part is incomplete. It lacks, say, designation of a particular alloy or statement of physical requirements. He calls the ACO, who checks with the engineering agency, which only now discovers it has goofed. There is much frantic checking and rechecking before the missing data are identified, the ACO apprised, and the contract amended.

There may be nothing more drastic involved here than an extension of the delivery schedule; nevertheless, there has been a breakdown of the fundamentals. The Government has not specified what it requires and, because of failure on both sides, it will not get delivery when originally needed. This is administrative trouble in its simplest form. Volumes could not adequately contain all the variations on the theme of failure to specify requirements precisely and to understand them before solicitation and submission of bids and quotations.

In the instance cited, the error was clearly identifiable and correctable without recrimination. It is the next step backward to the beginnings of the contractual chain where the subjectivity we spoke about comes into play involving personal pride, face, or just plain orneriness. It is no empty boast that it is and has been the unalterable policy of the United States that our fighting forces have not only the very best tools to accomplish assigned missions, but also the safest.

One of the bases for fulfillment of this policy is superior engineering. Sometimes, in an excess of care or zeal, a specification calls out a requirement which is technically plausible, but in the shop raises strong doubts of its practicality on a production basis. Therefore, it would be further along in the contract performance that the grim spectre of impossibility of performance looms. The exact nature of the difficulty is not pertinent here but it could be that a certain metal is too hard to be machined or that a certain dimension is impossible to hold within tolerance.

Now the drama begins, but production stops. There are hurried conferences, visits to the plant by assorted Government personnel, ACO representatives, quality assurance people, it being still too early for the lawyers. There may be one or 10 conferences and all too often (sad to relate) agreement is delayed, obstructed by human considerations such as defending to the last the specified requirement or warding off all implications of lack of know-how directed to an organization with a proud record of performance of all sorts of impossible tasks.

In a good majority of cases, there is compromise and the production process begins, having lost not only the actual down time but also momentum and, most important, probably what can best be expressed in terms of sports competition, desire.

Sometimes there is no compromise. The ACO is constrained to institute termination for default proceedings. The requirement is placed with another contractor probably with amended specifications hopefully to avoid the difficulties encountered in the defaulted contract. Then the grim, long process of appeal begins and, eventually, there is a decision confirming the position of one side or the other at a time when who was right is no longer important. What is vitally important is that there has been an unconsionable loss of time in getting needed material to the fighting forces.

As observed in the foregoing, the problems in administering contracts are myriad. The mishaps which can befall a "good" contract defy enumeration. Raw material shortages or delays, labor shortages, training of labor, subcontractor delays, unanticipated credit or financing shortages, illness or personal difficulties affecting key individuals are but a few. All of those mentioned will have some effect upon delivery schedules; some will be considered by the ACO as excusable, some not.

Again the important aspect is not that it is or is not legally the contractor's fault, but how great will be the harmful effect upon the paramount consideration, to get the materiel to the field. It is the joint task of the ACO and the contractor to meet each challenge along the road to timely contract completion intelligently and vigorously. However, what should be realized is that administrative troubles too often germinate long before the contract comes into being. The way of contract performance would be immeasurably more smooth if the pre-contract scattering of the seeds of adversity could be prevented. In so many cases, it is possible so to do.

One major source of endless controversy in Government contracting is the subtle distinction between getting what the PCO thought he ordered, instead of what he actually ordered. Baldly stated, the necessity for making such a distinction can be eliminated by better technical data packages (TDP). In the face of loud expostulation, it must be said that every TDP, no matter how reliable the source, can bear one additional, last, complete, technical review before procurement, particularly if there has been no previous or recent mass production of the item described. It will be objected that time will not permit such review even if the package needed it which, of course, it does not. One can only recollect the oft-repeated scenes of lines of machine tools idle while a discrepancy in the TDP was thrashed out.

The single step of the oriental sage necessary to commence the long journey to eliminate unnecessary administrative grief could well be an extra required final review, in depth, of the technical and administrative requirements of the TDP, including the reasonableness and reliability of the acceptance techniques. The second phase cannot be termed a step, since it involves selling to prospective bidders on Government contracts certain basic concepts which are repeated "ad nauseam," but seemingly are widely ignored until the grim reality of contract losses or termination for default points up their verity.

In addition to the cold hard look before bidding, there must be, for the prudent, certain basics for preparation for contract performance. The most important of these are engineering reviews leading to good tool design, training of workers (chiefs as well as indians), timely ordering of material and selection of subcontractors, and institution of informed process controls. If the proper care has been given to bid preparation and to preparation for contract performance, there will be no necessity for resort to that last refuge of the inept, the cutting of corners to make up for lack of foresight or planning, presaging almost certain disaster.

Having descended from the broad, grand plateau of "contract administration problems" to the narrow ledge of the diagnosis and cure of a very few, the writer is still of the unshaken belief that there is ulcer prevention in a certain careful subjectivity of approach to a contract by both principals. In our American style of football, it is traditional for the coach of a losing team to abandon involved methods of offense and defense and return to the fundamentals: blocking and tackling. Here the analogy holds. Both contracting officers and those wishing to have Government contracts should return to the fundamentals also: know that you have specified what you require; know that you know what you are bidding on; and be sure you have the facilities, money and know-how to perform for the price. In contracting as in sports, fundamentals are the name of the game.

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Longlines Leasing In Hawaii Centralized in Honolulu

The DOD Defense Communications Agency (DCA) has opened a single, consolidated Defense Commercial Communications Office (DECCO–Pacific) in downtown Honolulu, Hawaii, to effect centralized procurement of longlines leased communications service in Hawaii. The establishment of the DECCO–Pacific Office in Honolulu placed its functions in close proximity to the Hawaiian Telephone Co. and other commercial common carriers in Hawaii. Previously these functions had been handled through a number of military installations in Hawaii.

The expansion of voice and record communications automatic switching capability in Hawaii developed a DOD requirement for a centralized leasing activity similar to the Defense Commercial Communications Office (DECCO) at Scott AFB, Ill. DECCO is responsible for leasing and fund management for all long-haul DOD and Federal Aviation Agency commercial communications within and emanating from the continental United States.

DECCO–Pacific responsibilities and objectives may be summarized in the following three tasks:

- To carry out the longlines leasing responsibilities assigned to DCA by the Secretary of Defense.
- To insure a uniform response to DCA instructions for contracting, engineering and financial management of the switched networks.
- To obtain all possible economic advantages under current and future bulk rate tariffs through centralized management and ordering procedures.

Since the DECCO–Pacific Office opened last fall, the Automatic Digital Network (AUTODIN) Switch at Wahiawa, Hawaii, became operational on April 3. Another automatic switch, the Automatic Voice Network (AUTOVON) Switch, is expected to be installed in late 1968.

The leasing tasks associated with the switched networks and other private line services are typical of the activities of DECCO–Pacific. In reality they encompass procurement actions formerly accomplished by the individual Military Services in Hawaii. By March 1967, DECCO–Pacific had assumed responsibility for over 800 Communications Service Authorizations (CSA's) with an annual dollar expenditure of over $2 million.

Monthly bills submitted by the carriers and noncarriers are mailed to DECCO at Scott AFB and matched against the financial records in the computer data base. If a matched condition is reached, a computer-generated voucher is used to document payment to the respective carriers. Unmatched conditions attributed to DECCO–Pacific computer inputs have been averaging less than one-half of one percent each month for the 800 bills received. The accuracy of the DECCO–Pacific input has enabled DECCO to process and pay for leased services in Hawaii within 72 hours.

The objectives of DECCO–Pacific are gradually becoming a fact. Transfer of leasing actions, formerly handled by the three Military Services, is being accomplished as fast as the details are worked out. New service leasing is being accomplished in a timely manner to meet the service date requirements of the validating offices. The next step is to apply bulk pricing wherever possible and reduce the overall on-island communications cost to the Government.

DECCO–Pacific is managed and operated by one officer and four civilians. The chief of this field activity is Captain Eugene Morris, USAF.

Research in the Air Force

by

Brig. Gen. Ernest A. Pinson, USAF

Research and development is one of the mightiest forces for progress within the American economy and a vital force for national defense and national survival. For a nation so deeply committed to the machine, the magnitude of America's effort in technology is not surprising.

Unfortunately, however, a substantial number of Americans forget the great amount of basic research that has made possible the current technological explosion. Many people do not fully realize that this explosion has carried us to the frontier of human knowledge—that every technological advance faces us with unknowns that must be solved before we can proceed further. The solutions to these unknowns can only be discovered by creative scientists through fundamental research into the nature of the world we live in and how things function.

Scientists, engineers and managers know that the Air Force's capability to accomplish its mission is vitally affected by technological progress. This is true today and will be even more so in the future.

Since technological progress is dependent upon new scientific knowledge, it is mandatory that the Air Force be involved in a vigorous and dynamic research program that is relevant to both current and future needs.

To name a few, these needs include airborne, real time display techniques for night reconnaissance and attack; high temperature superconductors; lightweight, strong filaments; laser and superconductor applications; controlled nuclear fusion; higher energy, non-nuclear explosives; vortex flow applications; and lightweight, compact supersonic compressors.

Another very important requirement for the Air Force was brought on by the tremendous advances made and being made in computer processing technologies. We need comparable advances in operations analysis—a more powerful body of science for real time decision making in command and control must be developed.

Seeking this new scientific knowledge is the mission of the Office of Aerospace Research (OAR), the research agency of the Air Force, located in Arlington, Va. To accomplish this mission, OAR scientists are now working in important scientific disciplines that did not exist a quarter of a century ago. They are asking questions that could not have been asked then. In many instances the vocabulary in which to ask them did not even exist.

As the prime research agency of the Air Force, OAR is a separate operating agency. We report directly to Air Force headquarters. We are on the same level of command as the combat commands, and the Logistics and Systems Commands. I mention this only to emphasize the importance the Air Force places on research.

We are, however, a small organization with only 1,937 assigned personnel, two-thirds of which are civilians.

To accomplish our research objectives we have three in-house laboratories, plus the Air Force Office of Scientific Research and the Office of Research Analyses.

In addition, we have a European Office in Brussels, a Latin American Office in Rio de Janeiro, and field detachments at Patrick AFB and Vandenberg AFB, and in Los Angeles.

Brig. Gen. Ernest A. Pinson, USAF, is Commander, Office of Aerospace Research, Arlington, Va. Prior to assuming command of OAR in February 1965, he served as Dep. Commander and before that as Vice Commander, Air Force Cambridge Laboratories, Mass. He holds an A.B. degree from Depauw University, a Ph.D. in Medical Physiology from the University of Rochester, and a Ph.D. in Physics from the University of California. Gen. Pinson was nominated for promotion to major general on March 7.

Our largest laboratory—the Air Force Cambridge Research Laboratories (AFCRL), Bedford, Mass.—is the focal point for research in the environmental sciences and provides a major in-house facility for research in the physical and engineering sciences relating to geophysics. They also do exploratory development work in geophysics which means simply that they carry their research into the development stage in these areas.

Because of their unique facilities, scientists at AFCRL conduct sizeable programs for the Air Force Systems Command, National Aeronautics and Space Administration, the DOD Advanced Research Projects Agency, and the Defense Atomic Support Agency.

The Aerospace Research Laboratories (ARL), at Wright-Patterson AFB, Ohio, conduct in-house research programs in the physical and engineering sciences. ARL also plays a significant role in the professional development of Air Force officers through its interface with the Air Force Institute of Technology (AFIT). The facilities of the laboratories are made available for graduate students at AFIT working toward advanced degrees. In addition, scientists at ARL teach at AFIT.

Featuring research in chemistry, mathematics and aerospace mechanics, The Frank J. Seiler Research Laboratory at the Air Force Academy is unique in that it allows instructors and cadets at the academy to work on research projects while extending the scientific education of the cadets. This provides a research environment that will influence talented cadets to follow a research and development career in the Air Force.

The Air Force Office of Scientific Research, co-located with OAR headquarters, in Arlington, Va., is the broadest in research scope of any OAR activity. Through its grants and contracts program, this office covers every element of scientific research. Its contracts with the scientific community, primarily through educational institutions and with individual scientists, cover most of the free world.

The Office of Research Analyses, Holloman AFB., N. M., is responsible for systems, technical and mission analysis. This office conducts systems analysis to determine the technical validity, operational feasibility and cost effectiveness of proposed future aerospace weapon system concepts. It also conducts applications studies for some of our research.

The European Office of OAR is the on-the-spot broker for research in Europe, Africa and the Near East. Its customers are OAR, the Systems Command and DOD. It has no budget of its own. The money it spends for research comes from 17 different organizations in the United States. The Latin American Office performs a similar function in South America.

A very important activity of OAR, the Aerospace Research Support Program, is frequently the gateway to space for DOD scientists and engineers. This DOD program is managed by OAR and designed to provide the Army, Navy, or Air Force experimenter with the necessary hardware to get his experiment into the space environment. This includes the use of rocket boosters and satellites purchased with OAR funds. We confine this program to support of research and exploratory development in space as compared to advanced and engineering development programs.

To accomplish our research we have a five-year plan, reviewed and revised annually. It is a requirement plan that includes projections of resources such as facilities, manpower and funds necessary to adequately support our research. It is prepared to correspond to the time period related to the DOD Force and Financial Plan.

In addition to the five-year plan, we publish annually our research objectives. Authorized contractors and grantees can obtain this document from the Defense Documentation Center, Cameron Station, Alexandria, Va. 22314. The Clearinghouse for Federal and Scientific Information. Department of Commerce, Springfield, Va. 22151, also has the document for sale at $3 per copy for those individuals not eligible to receive material through the Defense Documentation Center.

Theoretically, we should conduct Air Force research across the whole spectrum of the sources of human knowledge. Practically, we must limit ourselves to the areas where we can most logically expect to find answers of value to the Air Force.

We call this relevant research. This includes research for new fundamental knowledge in the physical, environmental, engineering and life sciences.

I would like to emphasize that individual research contracts and grants are generally small, compared to the large sums expended on exploratory and applied research and development. We seek to buy brain power to supplement our in-house capability.

Contractors do not need large facilities to compete for this type of work. Proposals of Air Force interest are selected on the basis of originality and the caliber of the principal research investigator.

Research projects supported by OAR open vast areas of investigation and are repeated reminders that, while basic research can be programmed by management, discoveries and significant breakthroughs cannot.

Continually, however, we see Air Force research yielding rich returns along lines of Air Force interest.

OAR scientists conducted the initial studies and established the technical feasibility leading to the design and construction of the Over-the-Horizon Detection System.

Our scientists also performed the initial research and later supported the basic work which provided the foundation for the phased array and frequency scanning antenna systems which have proved of great significance to the military for future ballistic missile defense and for communications satellites.

We are doing considerable research on clear air turbulence. We are studying lasers, and microwave radiometers as possible warning devices. This is especially important in the age of supersonic aircraft.

Research has confirmed the feasibility of supersonic combustion at both relatively low as well as high supersonic Mach numbers. The way is now open for future development of a ramjet capable of a wide range of speeds up to and including orbital velocity.

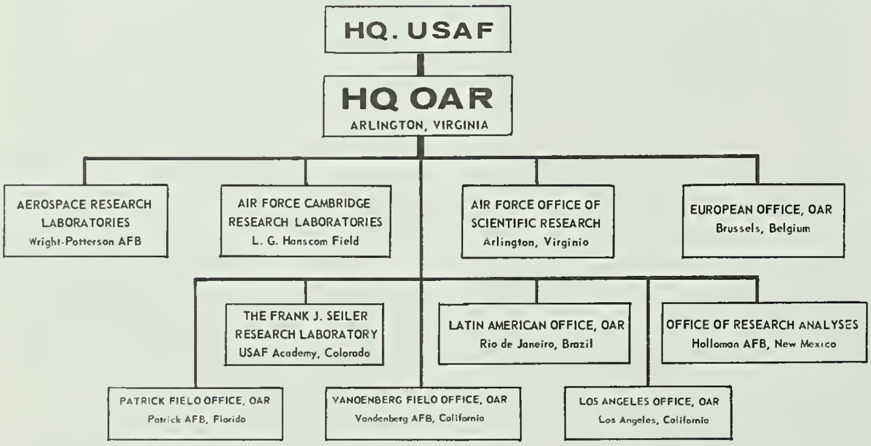
Research in energy conversion involving fluid dynamic processes has led to new concepts for the separation of solid and liquid particles from gases. Such a device is now possible for use as a dust separator for the intakes of jet engines powering aircraft and helicopters, and will greatly increase the efficiency and operational capabilities of these vehicles in dusty areas. This separation process may be useful in designing nuclear power sources.

Rapid identification of disease-producing bacteria is now possible by use of an OAR contractor-developed gas chromatographic technique. Bacterial metabolic products provide the information source for the chromatogram tracing. This tracing produced by each strain of bacteria differs significantly; thus we now have a "fingerprinting" technique for disease germs. Such a device will prove especially useful in hospital diagnosis, air and water pollution studies, search for life on other planets, and in biological warfare detection.

OAR scientists, having already found a practical method for dispersal of cold fog, are now working on a method for warm air fog dispersal which would be of special benefit to the Air Force in tropical areas such as Southeast Asia.

The discovery of the first chemical laser came as the result of an OAR university grant. Aside from its obvious research value, a chemical laser, unencumbered by ponderous banks of condensers and heavy electrical generating systems, has enormous potential in space communications, and for satellite detection and

(*Continued on Page 34*)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The Contract Messmen Program Shifts into High Gear

by

Earl Nichols

At a time when the strongest emphasis is being place on the country's need to use civilians for tasks which will free military personnel for more urgent duties, the Navy's experience with the "civilianizing" of Navy shore messes is receiving studied attention.

The work in the messes of some 37 Naval activities is now being performed by civilian personnel or under contract. This involves the replacement of about 2,500 military personnel with civilians. An additional 18 facilities are being surveyed and are expected to be contracted for within the next 12 months, which would replace about 500 more military personnel. These changes are being carried out under the Contract Messman Program.

The Contract Messman Program, although it was developed by the Navy several years before DOD initiated its civilian substitution policy, had the same basic goal—to better utilize military personnel by replacing military with civilians in certain jobs. Under the program, contracts are made with private service companies to supply civilian personnel to perform mess functions at Naval installations ashore which are usually assigned to unrated military trainees. These functions were initially limited to scullery work, keeping floors and tables clean and polished, sanitary care of halls and bathrooms, garbage removal and receiving deck work. The program has since been expanded to include some food handling jobs.

The Navy Subsistence Office, which administers the program under the direction of the Navy Supply Systems Command, acknowledges that the program has been beset with problems, some of which continue to plague its administration. An installation's personnel must be fed and fed on time, and any disturbance in the performance of a contract affects that basic service and becomes a serious morale problem.

The Navy Subsistence Office notes that the program possesses the attributes of the fabled little girl who when good "was very very good and when she was bad she was horrid." Despite the problems, the program works and is being expanded. The need that existed to release military personnel for other duties is even more urgent today than when the program was begun.

The Contract Messman Program originated from a memorandum which the Assistant Secretary of the Navy (Personnel and Reserve Forces) addressed to the Chief of Naval Personnel in August 1960 requesting a survey into the possibility of better utilizing Navy manpower by contracting with civilian firms to supply messmen for Naval activities ashore. A feasibility study was made and the program determined to be possible. In early 1962, pilot programs were begun at Naval Air Station, Quonset Point, R.I., and Naval Stations, Newport, R.I., and Washington, D.C.

Over a two-and-a-half-year period, the pilot programs proved successful operations. This does not mean that all went smoothly. On the contrary, several problem areas became apparent early in the program. Inept contractors, weak contract specifications, and a few instances of poor rapport between contractors and Navy management personnel enlivened the test period. Despite these and other difficulties encountered, the program was evidently workable.

Earl Nichols is a staff writer with the Publications & Technical Information Div. of the Naval Supply Systems Command. The Navy Subsistence Office, which administers the Navy food service program, is an activity of the Naval Supply Systems Command. Mr. Nichols holds a B.A. degree from Queens College, New York, N. Y.

In late 1964, in response to the support given the program by the Chief of Naval Personnel, Vice Admiral B. J. Semmes, DOD approved it on the basis of the savings inherent in the program. The Bureau of Supplies and Accounts was authorized to direct its implementation. By Jan. 5, 1965, 23 activities had contracted for mess non-food handling services to be performed by civilians.

The Navy Subsistence Office anticipated a two-and-a-half-year period during which problems might be evaluated and brought under better control. However, the program was barely under way when it received impetus from two directions. In October 1965, DOD announced its civilian substitution policy. At the same time, demands for trained military personnel were immensely sharpened by requirements in Southeast Asia. Naval facilities, particularly the large Naval Training Centers and the Naval Construction Battalion centers, were under great pressure to provide trained personnel as quickly as possible. Commands could no longer afford to use 90 days of a trainee's time in mess duties when there was such urgent need to train him into a rating and have him fill a billet immediately. Accordingly, a number of facilities sought the use of civilians in their messes and several began using them in food handling jobs. Thus the program was suddenly expanded in terms of numbers and with respect to the skills required for some jobs.

The scope of the contract messman program was further broadened when a Navy board on the retention of personnel, headed by Rear Admiral John Alford, recommended in 1965 that the Navy "expand the contract messman program to include all shore activities" in the continental United States.

This brings into consideration one of the limitations on the program—installation size. The program had been found workable in larger messes. However, about half of the Navy shore messes are not of a size which would justify contracting for 20 or more civilians, the minimum number for which a contract can be satisfactorily negotiated.

Another limitation on the program is the need to maintain Navy commissarymen (cooks) in shore installations. To replace these Navy enlisted men with civilians would eliminate many shore billets and force commissarymen to spend their entire Navy careers aboard ship. This would be contrary to established personnel retention policy to rotate personnel between ship and shore assignments and would affect the morale of Navy commissarymen. Civilian employees are utilized in some installations for counter service, salad preparation, and in other food service capacities, but not as cooks.

The effectiveness with which a contract is fulfilled by a contractor is influenced by diverse factors, including area unemployment rates and the attitudes of contractors.

Experience has shown that the unemployment rate in the area where a contract is let generally affects the quality of performance by the contractor. Where the unemployment rate is low, contractors are forced to draw on less skilled and less reliable persons, and personnel problems occur more frequently. Personnel problems diminish greatly when the area concerned has a high unemployment rate.

One of the obstacles to successful operation of a messman contract is a lack of understanding on the part of contractors as to the standards which the Navy maintains, and expects to be maintained, in its facilities. Firms bidding on the contracts are generally oriented to providing a janitorial-type service, rather than to food service, and there is sometimes a lack of proper supervision of the nature needed. Both contractors and employees often have to go through a period of re-education, and this can be a time of considerable strain during which personnel problems are not uncommon. Personnel problems have included excessive absenteeism, production slowdowns, walkouts and sitdown strikes. It must be admitted that military personnel have sometimes failed to use the best management techniques in coping with civilian employee problems, often due to a lack of experience in dealing with civilian help.

In mid-1966 two adjustments were made in the contracts which have raised the quality of performance:

- Contractors are now required to pay employees on the basis of an area wage survey conducted by the Department of Labor. This curbs the tendency of marginal contractors to draw on the lowest sector of the labor community and generally raises the quality of employees provided to Naval facilities.
- The utilization of women has definitely raised the level of work performance and decreased the severity of personnel problems. Women were not used under the early messman contracts because Naval activities were reluctant to introduce women into stations with an all-male population and some were not equipped with facilities to accommodate women. However, in April 1966 a contract was negotiated for the Naval Air Station at Mirimar, Calif., which included a dispensation to utilize women and recommended this be done. The results were so successful that contracts let in July 1966 omit any reference to the employment of women. The Navy Subsistence Office encourages the hiring of females by contractors and strongly urges all activities to provide facilities for their employment.

That is the program to date, the problems attendant upon it, and the major improvements which have increased its effectiveness. What does the future hold for the program? What other avenues can be explored to upgrade work performance and to "de-bug" it in problem areas?

- The Navy Subsistence Office is compiling data on problem areas which consistently appear. Some difficulties can be reduced by purifying and updating contract specifications and by seeking out ways of raising the quality, standards and performance of Navy mess civilian employees.
- The Navy is continuing its efforts to interest food service firms in participating in the program. In the past, established food service contractors have generally avoided bidding for messman contracts. One reason they were reluctant to bid is that contracting, in conformance with the Armed Services Procurement Regulation, is on an annual basis. Reliable food service firms cannot build effective service in a year's time. With no assurance that they would receive subsequent contracts, they simply avoided bidding. The Navy Subsistence Office has now been given authority to permit one-year contracts with extension options. Also, food service firms are geared to handling an entire food package—purchase of the food, its preparation, and food service. There have been indications that such companies might be interested in messman contracts if these were offered on a complete package basis. The next 18 months should see the expansion of the program to its limits under existing policy. It is possible that, as the program grows and assumes permanent status, some food service firms will decide to participate.
- Consideration is being given to providing training for the civilian employees to help orient them toward Navy practices and standards. Under such an arrangement, the contractor would have to assume responsibility for paying the employee while being trained.
- The Navy has under consideration providing the physical examination which each employee must have before working in a Naval facility. From the Navy point of view, this would be preferable to accepting a physician's report from the employee.

An alternative to contracting out the messman service would be the use of Civil Service personnel. While this is a direction which may be further explored, the cost is believed to be prohibitive.

Despite the problems which have challenged the program from its inception, the results have shown that the program works. Out of some 50 contracts negotiated to date, only two had to be canceled because of defaults in performance. The Naval Air Station, Miramar, Calif., has efficiently incorporated its civilian contract workers into an operation which won for the station the coveted Ney Award for excellence in food service in 1966.

Captain E. A. Hamblen, Commanding Officer of the Navy Subsistence Office, believes that the program is achieving its goals. "Certainly it has helped release Navy personnel to posts where they can be more effectively used," he said. "Both in terms of manpower utilization and on the basis of fiscal savings, the contract messman program is doing the job for which it was intended. Our major aim now is to upgrade its effectiveness at the same time that we increase its scope."

MEETINGS AND SYMPOSIA

MAY

Annual National Colloquium on Information Retrieval, May 3-4, at the Hotel Adelphia, Philadelphia, Pa. Contact: STINFO Project Director, A 2100, Frankford Arsenal, Philadelphia, Pa. 19137 (Area Code 215) JE 5-2900, Ext. 3219.

Sixth Rare Earth Conference, May 3-5, at Gatlinburg, Tenn. Co-sponsors: Air Force Office of Scientific Research and Oak Ridge National Laboratory. Contact: Dr. Anthony J. Matuszko (SRC), Air Force Office of Scientific Research, 1400 Wilson Blvd., Arlington, Va. 22209, (Area Code 202) OXford 4-5337. Program contact: Dr. W. C. Koehler, Solid State Div., Oak Ridge National Laboratory, P.O. Box X, Oak Ridge, Tenn. 37831.

14th Annual Institute on Government Contracts, May 4-5, at Washington, D.C. Co-sponsors: George Washington University and the Federal Bar Association. Contact: 14th Annual Institute on Government Contracts, Federal Bar Assn., 1815 H St., N.W., Washington, D.C. 20006.

International Conference on the Mechanics of Composite Materials, May 8-10, at the Marriott Inn Motor Hotel, Philadelphia, Pa. Sponsor: Office of Naval Research. Contact: Ted Ryan, Space Sciences Laboratory, Conference Coordinator, (Area Code 215) 969-2954; or J. M. Crowley, Office of Naval Research, Code 439, Main Navy Building, Washington, D.C. 20360, (Area Code 202) OXford 6-2283.

Electron, Ion and Electromagnetic Beam Symposium, May 9-11, at the University of California, Berkeley, Calif. Co-Sponsors: Office of Naval Research and the University of California. Contact: Lt. Ronald Troutman, Office of Naval Research, Code 427, Room 4102, Main Navy Building, Washington, D.C. 20360, (Area Code 202) OXford 6-2289 or 6-4301.

Photo-Optical Systems Evaluation Seminar, May 11-12, at Sheraton Hotel, Rochester, N.Y. Co-sponsors: Society of Photo-Optical Instrumentation Engineers and the Air Force Systems Command. Contact: John F. Carson, Chairman, SPIE Seminar Program Committee, 65 Plymouth Ave. S., Rochester, N.Y. 14608.

Conference on Expandable and Modular Structures for Aerospace Applications, May 15-17, at the Carillon Hotel, Miami Beach, Fla. Sponsors: Air Force Aero Propulsion Laboratory, Space General Corp. and GCA Viron Div. Contact: Fred W. Forbes (APFT), Air Force Aero Propulsion Laboratory, Wright-Patterson AFB, Ohio 45433, (Area Code 513) 253-7111, Ext. 52771.

21st Annual Power Sources Conference, May 16-18, at the Shelburne Hotel, Atlantic City, N.J. Sponsor: Army Electronics Command, Fort Monmouth, N.J. Contact: Herbert W. Schwartz, Conference Coordinator, Power Sources Div., Electronic Components Lab., Army Electronics Command, Fort Monmouth, N.J. 07703, (Area Code 201) 535-2349.

Interagency Data Exchange Program (IDEP) Annual Conference, May 16-18, at Clear Lake, Tex. Sponsor: Policy Board, IDEP. Contact: Army Representative, Policy Board, IDEP, Systems Research & Development Branch, S&TI Div., Army Research Office, Office of Chief of Research & Development, Washington, D.C. 20310, (Area Code 202) OXford 4-3513.

Third System Performance Effectiveness Conference, May 17-18, at State Department Auditorium, Washington, D.C. Sponsor: Naval Material Command. Contact: Mr. G. W. Neumann, Executive Secretary, SPE Steering Committee, Naval Ship Systems Command, Code 03511, Washington, D.C. 20360, (Area Code 202) OXford 6-3097.

Man, Materials and Nondestructive Testing Symposium, May 21-26, at Sheraton Mount Royal Hotel, Montreal, Quebec, Canada. Co-sponsors: Office of Naval Research and British-Canadian-U.S. TriPartite Technical Group. Contact: Mr. V. G. Behal, Dominion Foundries and Steel, Ltd., P.O. Box 460, Hamilton, Ontario, Canada; or Mr. J. M. Crowley, Office of Naval Research, Code 439, Main Navy Building, Washington, D.C. 20360, (Area Code 202) OXford 6-2283.

Corrosion of Military and Aerospace Equipment Symposium, May 23-25, at Denver, Colo. Sponsor: Air Force Materials Laboratory, Wright-Patterson AFB, Ohio. Contact: Fred H. Meyer Jr., Applications Div., Systems Support Branch, Air Force Materials Laboratory, Wright-Patterson AFB, Ohio 45433.

JUNE

Conference on High Energy Therapy Dosimetry, June 15-17, at New York, N.Y. Sponsor: Office of Naval Research. Contact: Eunice Thomas Miner, Executive Director, New York Academy of Sciences, 2 E. 63rd St., New York, N.Y. 10021.

Computerized Imaging Techniques Seminar, June 26-27, at the Marriott Twin Bridges Motor Hotel, Washington, D.C. Sponsor: Air Force Office of Aerospace Research. Contact: Jerome I. Mantell, Chairman, 18100 Frederick Pike, Gaithersburg, Md. 20760, (Area Code 301) 921-7896.

Field Emission Symposium, June 26-30, at Georgetown University, Washington, D.C. Sponsors: Office of Naval Research, Georgetown University and the National Bureau of Standards. Contact: Lt. Ronald Troutman, Office of Naval Research, Code 427, Room 4102, Main Navy Building, Washington, D.C. 20360, (Area Code 202) OXford 6-2298 or 6-4301.

Fundamental Physics of the Magnetosphere, June (dates undetermined), at Boston, Mass. Co-sponsors: Air Force Cambridge Research Laboratories and Boston College. Contact: J. F. McClay, Air Force Cambridge Research Laboratories, L. G. Hanscom Field, Bedford, Mass. 01731, (Area Code 617) CR-4-6100, Ext. 3218.

JULY

1967 Annual Conference on Nuclear and Space Radiation Effect, July 10-14, at Ohio State University, Columbus, Ohio. Sponsors: Institute of Electrical and Electronics Engineers, NASA Office of Advanced Research and Technology, Office of Naval Research, Air Force Office of Scientific Research and the Department of the Army. Contact: Mr. E. E. Conrad, Harry Diamond Laboratories, Washington, D.C., 20438, (Area Code 202) OXford 6–9126.

1967 Summer Seminar on Mathematics of the Decision Sciences, at Stanford University, Palo Alto, Calif., July 10-Aug. 11. Sponsors: Air Force Office of Scientific Research, Atomic Energy Commission, Army Research Office, Small Business Administration, National Bureau of Standards, Office of Naval Research, National Institutes of Health and the National Science Foundation. Contact: Maj. John Jones Jr., (SRMA), Air Force Office of Scientific Research, 1400 Wilson Blvd., Arlington, Va. 22209, (Area Code 202) OXford 4-5261.

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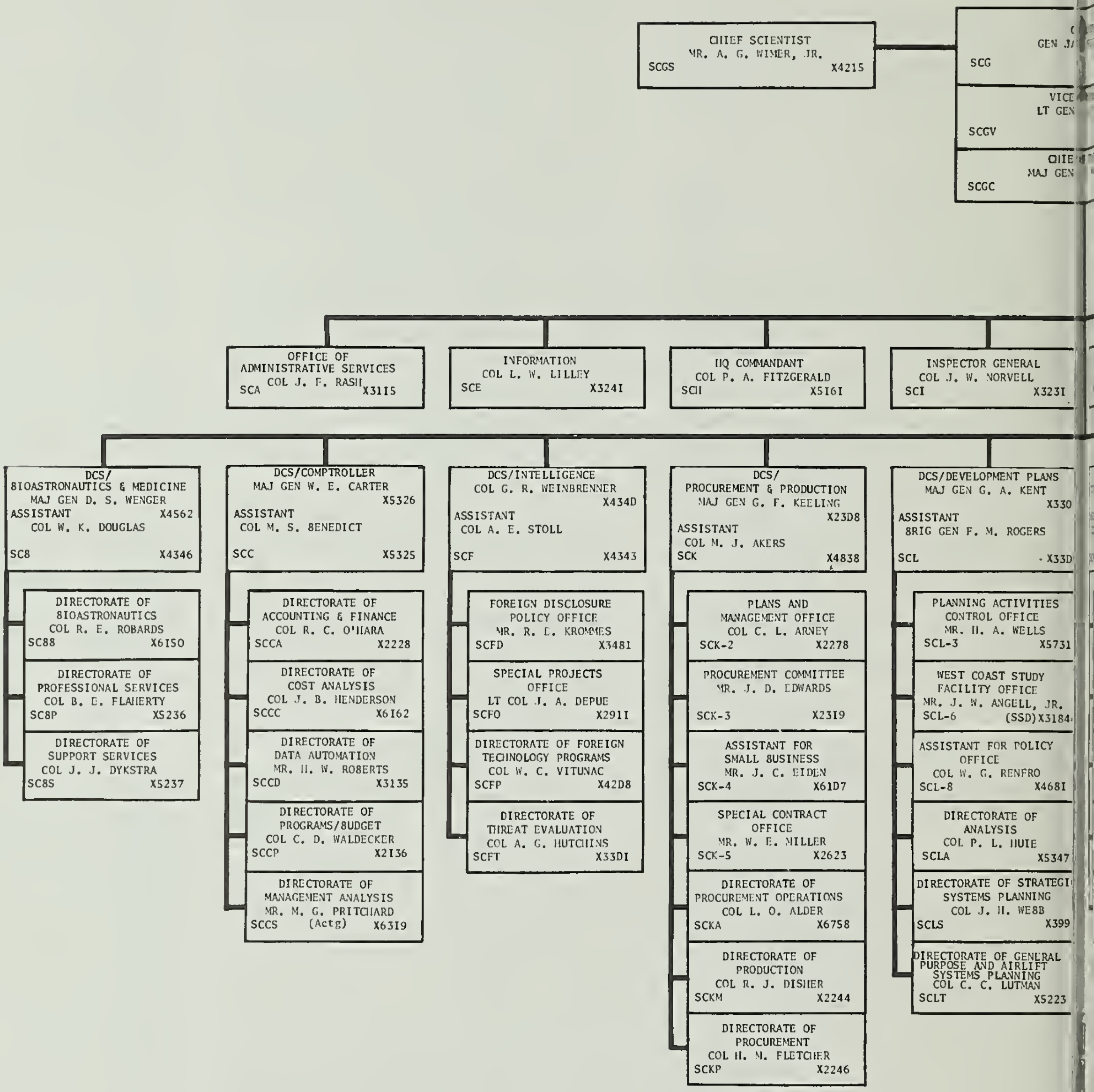

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April 1967

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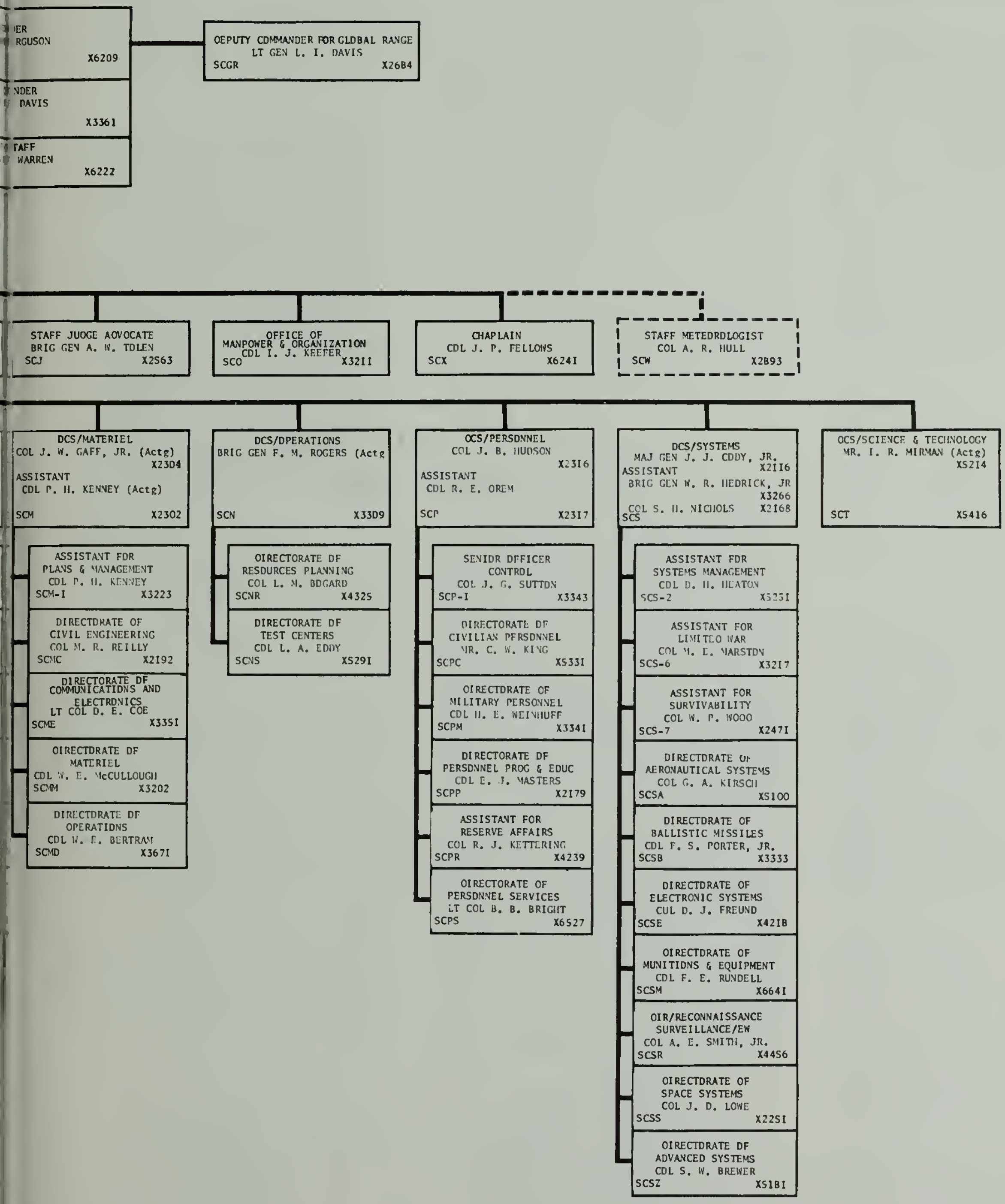

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JUNE 1967

SPEAKERS CALENDAR

DEPARTMENT OF DEFENSE

Hon. Paul R. Ignatius, Asst. Secretary of Defense (Installations & Logistics), at the 25th Anniversary Meeting of the National AeroSpace Services Assn., International Inn, Washington, D. C., May 2.

Mr. Henry A. Wallace, Los Angeles Regional Manager, Defense Contract Audit Agency, at the Aerospace and Electronics Committee of the Los Angeles Chapter of Certified Public Accountants Meeting, Los Angeles, Calif., May 25.

Lt. Gen. H. C. Donnelly, USAF, Dir., Defense Atomic Support Agency, at Memorial Day Services, Santa Fe National Cemetery, Santa Fe, N.M., May 30.

DEPARTMENT OF THE ARMY

Alfred B. Fitt, General Counsel, at Veterans Memorial Building Awards Presentation, Detroit, Mich., April 26.

Brig. Gen. Harry G. Woodbury Jr., Director of Civil Works, Office of Chief of Engineers, at American Power Conference Marketing Seminar, Chicago, Ill., April 26.

DEPARTMENT OF THE NAVY

RAdm. Henry L. Miller, Chief of Information, at Navy League Convention, Jacksonville, Fla., May 1-5.

Hon. Paul H. Nitze, Secretary of the Navy, at Jr. Chamber of Commerce Armed Forces Day Luncheon, Los Angeles, Calif., May 16.

Adm. Alfred G. Ward, U. S. Representative to NATO, at Armed Forces Week Celebration, Detroit, Mich., May 16; at Commissioning Ceremony of USS Ramsey (DEG–2), Seattle, Wash., May 27.

RAdm. P. A. Beshany, Dir., Submarine Warfare, at Kiwanis International Club, Columbus, Ga., May 16.

RAdm. James L. Abbot, Commander, U.S. Naval Support Force, Antarctica, at Armed Forces Day Celebration, Mobile, Ala., May 18.

VAdm. Alexander Heyward, Chief of Naval Air Training, at Armed Forces Council, Kansas City, Mo., May 20.

VAdm. Robert J. Stoh, Dep. Dir., Strategic Target Planning, at Armed Forces Day Banquet, Olathe, Kan., May 20.

RAdm. James F. Calvert, Dir., Political Military Policy Div., Office of Chief of Naval Operations, at Rotary Club, Youngstown, Ohio, July 5.

DEPARTMENT OF THE AIR FORCE

Hon. Norman S. Paul, Under Secretary of the Air Force, at Aviation Hall of Fame, New York, N.Y., May 7.

Lt. Gen. H. T. Wheless, Asst. Vice Chief of Staff, at Aviation Hall of Fame, New York, N.Y., May 7.

Lt. Gen. T. P. Gerrity, Dep. Chief of Staff (Systems & Logistics), at American Ordnance Assn., Washington, D.C., May 11; at Inter-Agency Data Exchange, Houston, Tex., May 17.

Brig. Gen. Guy H. Goddard, Dep. Dir. for Construction, Office of Dir., Civil Engineering, at Armed Forces Day Luncheon, Akron, Ohio, May 15.

Gen. B. K. Holloway, Vice Chief of Staff, at Hennessy Trophy Awards, Chicago, Ill., May 21; at Comestock Club, Sacramento, Calif., May 22; at American Fighter Aces Assn., Colorado Springs, Colo., June 24.

Gen. K. B. Hobson, Commander, Air Force Logistics Command, at National Security Industrial Assn., Dayton, Ohio, May 24.

Hon. Robert H. Charles, Asst. Secretary of the Air Force (Installations & Logistics), at Forging Industries Assn. Meeting, White Sulphur Springs, W. Va., May 26.

Maj. Gen. R. P. Klocko, Commander, Air Force Communications Service, at Armed Forces Communications & Electronics Assn. Meeting, Washington, D.C., June 5-7.

Brig. Gen. E. A. Pinson, Commander, Office of Aerospace Research, at American Society of Photogrammetry, Washington, D.C., June 26.

Navy Offers Direct Commission To Obtain Needed Civil Engineers

The Navy has established a Direct Procurement Program to recruit experienced civil engineers for direct appointment as Navy Civil Engineer Corps (CEC) officers for active duty in lieutenant and lieutenant commander grades.

Officers procured under this program will attend a nine-week orientation course at Newport, R. I., and an eight-week course at the Civil Engineer Corps Officers School, Port Hueneme, Calif. They will serve two years on active duty and agree to remain Naval reservists for an additional four years.

To become a reserve lieutenant, an applicant must have a baccalaureate degree in engineering or architecture, five years of acceptable experience, and be at least 26 years old. Lieutenant commanders must be 38 years old, or under, and will need the same educational background plus 12 years of experience. Graduate degrees in engineering normally count as a year of experience.

CEC officers, as members of the Naval Facilities Engineering Command (NAVFAC), build and maintain the Navy's vast, world-wide shore establishment. They also command Seabee Battalions and Seabee Teams.

Today, 17 Seabee Battalions are on active duty, eight of them deployed in South Vietnam where they support Navy activities and Marine Corps and Army combat troops. In addition, 11 Seabee Teams are performing civic action missions, eight of them in South Vietnam and three in Thailand.

Today in Vietnam, NAVFAC—designated the DOD construction agent in Southeast Asia—manages and directs, under the leadership of CEC officers, the operation of the largest construction job in world history.

The year 1967 marks the 25th anniversary of the Seabees, the 100th anniversary of the Navy Civil Engineer Corps, and the 125th anniversary of the Naval Facilities Engineering Command (formerly the Bureau of Yards and Docks.)

FROM THE SPEAKERS ROSTRUM

Excerpt from address by Maj. Gen. William J. Van Ryzin, USMC, Asst. Chief of Staff, G–4, Hq., U. S. Marine Corps, at Navy League Biennial Symposium/Exhibition, Washington, D. C., Feb. 10, 1967.

Maj. Gen. W. J. Van Ryzin, USMC

Marine Corps Logistics in Vietnam and Tomorrow

* * * * * * * * *

Many of our logistic problems in Vietnam are related directly to the distance which supplies must be shipped to get to the user and the difficulties in handling and moving cargo once it is in the objective area. We have learned to live with a long pipeline—it has been 210 days from requisition to delivery for many items—but we are working hard to shorten it. The monsoon winds and rains have not only curtailed unloading operations at times but have dissolved roads, washed out bridges, flooded staging areas and generally hampered movement. The monsoons also play havoc with items that are marked or packaged poorly.

Much of the credit for improvements which we have made in this area goes to our Navy teammates in the Mobile Construction Battalions and at the Naval Support Activity, DaNang. . . .

But there are still tasks to be done and industry can help! Industry can give us better cargo handling equipment and rapid unloading systems for ships. The methods we are using today are not much advanced over those we used in World War II. We need better shipping containers and we need better packaging. The containers we want should reduce breakage and pilferage yet facilitate easy movement by helicopter, vehicle, or landing craft. Consider this problem, if you will, as it relates to the multiple handling involved in an item which must go by ship from the West Coast to DaNang, by airlift to Hue-Phu Bai, by truck to Dong-Ha, and by helicopter to an outpost for use on patrol in a monsoon rain!

The Marine Corps, like the other Services, is looking for a good soil stabilizer. We need a substance that will work as a soil stabilizer and dust pallative under all weather conditions and on all types of soil with a minimum of site preparation. It must be economical and simple to employ. The materials we now have are moderately effective in sand but don't help us very much with mud. There are many applications for such a soil stabilizer but the one that concerns us most is providing a good surface for helicopter landing zones. The dust and debris problem was difficult in "Operation Hastings" but it is especially nettelsome at Chu Lai where we installed an expeditionary airfield with aluminum matting. The matting has performed far in excess of what was demanded of it but the soil beneath the matting has degenerated. Much of the surface has had to be lifted and relaid on stabilized soil. Dust and mud are among our worst enemies.

The single item that brings me the greatest amount of "fan mail" today is rainwear. Our troops have had ample opportunity to test their rain gear during the monsoons and they aren't very enthusiastic about their present ponchos. The ponchos protect the upper torso adequately but not the lower body. There is nothing they like about the poncho. What is needed is a piece of tropical rainwear that is light and durable but which gives good coverage against the chilling monsoon rain while permitting the body to "breathe." We've tried every known commercial product but so far haven't found the item we consider acceptable.

The weather and climate of Vietnam is as hard on equipment as it is on men. Constant exposure to heat, humidity, and an especially fine type of abrasive sand found in Vietnam have combined with the constant operation of equipment to raise wear-out rates well beyond the expected level. Relentless pursuit of the enemy, firing at extreme ranges and maximum charges, and communicating with units widely separated has placed added stress and strain on both weapons and communications equipment. Replacement of many items has had to be accomplished much sooner than was anticipated and item maintenance is required more often than was expected. Industry's role here is to help us develop more rugged and reliable equipment that will withstand these adverse conditions.

I recognize that the military constantly demands higher performance from industry and we still have to achieve a meeting of the minds on maintenance requirements. The Marine Corps is working on this problem and already has launched program "Trump"—Total Revision and Updating of Maintenance Procedures.

Our communicators are still calling for better radios, better batteries, a better tactical switchboard, and greater reliability in their equipment across the board. We're still trying to beat the weight and performance problems in manpack and miniature radios. We have progressed now to the point where, in our latest equipments, the battery is of equal or greater weight than the electronic portions of the system. If you want to help us in communications, give us a long-range, reliable manpack communications system, give us a miniature, short-range, two-way radio for our rifleman, and give us a lightweight, long endurance battery to power our radios. We also need a lightweight switchboard that is automatic or semi-automatic and will successfully endure the primitive conditions of the field environment including a monsoon rain. . . .

We also need an effective and reliable device that will detect mines and booby traps. These two types of devices are accounting for more Marine casualties in Vietnam today than all other casualty-producing agents combined. We have metallic detecting equipment but many of the mines and booby traps contain no metal.

What can we develop to help us detect booby traps in Viet Cong villages, caves and tunnels? As we open up more roads, railroads, villages, canals and rivers, the problem of mine and booby trap detection will become more and more of a concern to us.

Night vision is another area where we need imaginative help from industry. Lieutenant General Krulak, Commander of our Fleet Marine Force in the Pacific, said, "Give me a set of contact lenses that I can issue to every Marine so he can see in the dark as if it were daylight and we'll get this war over in a hurry." We're ready to accept something less than General Krulak's request but, whatever it is, it must be an improvement over the presently available equipment that is either too bulky or is tethered to a heavy power source.

. . . Industry made extraordinary efforts to get seismic intrusion devices and the moving target indicator to our forces in the field. The real meaning of their efforts is best stated by the failure of the Viet Cong to make a single successful incursion against the airfields at Da Nang and Chu Lai since they were installed.

Our operations in Vietnam have shown us that we need a good vehicle for use in marginal terrain. The vehicle we would like must be capable of operating over rice fields, dikes, mud, swamps and all varieties of terrain and, if at all possible, it should have the same degree of reliability that we get now from a two-and-a-half-ton truck on a good road. The vehicle that answers this need also may satisfy some of our requirements for ship-to-shore movement. In this connection, and looking not at Vietnam but at our pure amphibious requirements, the Marine Corps also needs industry's assistance to help us develop a high-speed amphibious support vehicle to move supplies and equipment from the dispersed ships of an amphibious task force to logistic support areas and using units ashore. The Landing Force Development Center at Quantico, Va., has been testing vehicles using the hydrofoil, planing hull, and hydrokeel or air cushion principles, but so far we've not been able to get a vehicle that has an acceptable high speed capability over both water and land.

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Address by Maj Gen. Glenn A. Kent, USAF, Asst. for Concept Formulation, Office of Dep. Chief of Staff (Research & Development), Hq., U. S. Air Force; and Dep. Chief of Staff, Plans, Hq., Air Force Systems Command, at Annual Meeting of the American Institute of Aeronautics & Astronautics, Boston, Mass., Nov. 29, 1966.

Brig. Gen. Glenn A. Kent, USAF

Technological Challenge of the 1970's in the Aerospace Field

Today, I would like to dwell on "how" we go about generating and producing the improved weapon systems that will enhance our operational capabilities in the 1970's. It is extremely important that we repeatedly and continuously appraise the organizational patterns and procedures which we use to deal with the challenges ahead. It is incumbent upon all of us—from Office of the Secretary of Defense (OSD) down—to constantly evaluate and re-evaluate not only the major decisions as to which systems are to be developed and procured, but also to evaluate the processes by which the decisions are made. Within the Services, the research and development communities must structure their administration, their thinking and their philosophy in such a way that no system concept of merit flounders for want of a road map through what appears to be an endless maze of bureaucracy.

During the past few years both the philosophy and methods of allocation of DOD resources have undergone significant changes. The decision makers who control the release of dollars for new systems and programs have evolved new procedures and new standards by which their determinations are made. This, of course, is not news to any of you.

In the early years of the new regime many of the military failed to comprehend the significance of the changes and rebelled at the centralization of authority which, along with an increased efficiency, the changes brought about. There is no doubt that fighting the problem, consciously or subconsciously, diverted a great deal of effort that should have gone into more constructive channels.

There are now fairly well described procedures that will be with us for the indefinite future whether we approve or disapprove. The Air Force (I can really only speak for the Air Force) is, for the most part, convinced of the effectiveness of these procedures. Certainly all are totally aware of their inevitability.

In response to the changing environment, the Air Force is realigning its planning process. It is our aim, once this realignment is implemented throughout all echelons of the Air Force research and development community, that there will be a much sharper focus on the basic philosophy of our research and development planning and on our procedures for marrying technology to operational problems to beget new and useful weapon systems on a timely basis.

In the past, much of the planning activity centered around the word "requirements." This word took on many meanings. A requirement sometimes expressed a deficiency or need; sometimes it described a proposal for new systems or equipment, namely, a Specific Operational Requirement (SOR). Frequently these SOR's attempted to specify—and those from higher headquarters even to direct—in minute detail the technical solution for the deficiency.

It is now generally accepted that directing the solution in the early stages is not appropriate action for either higher headquarters or the operational commands. It leads to all the dangers inherent in the prejudgment of solutions. Through a process of evolution, the "proposal" is replacing the "requirement" as the focus of our planning activities. It may appear that we are only creating a semantic disturbance, but we feel strongly that much of the haziness that enshrouded previous considerations will be dispelled by terms that identify more explicity the particular planning activity in which we are engaged.

It is the responsibility of Air Force Systems Command (AFSC), with general guidance from Headquarters, USAF, and the operational commands, to formulate and to conceive proposals for weapon systems to alleviate operational deficiencies and improve our capabilities. It is the planners' job to amalgamate the system concept from a multitude of inputs. Now everyone has his own graphic portrayal of this so-called "planning process." My favorite pictorial representation involves a giant witch's cauldron into which are dumped indeterminate quantities of the "political" by a politician with a bowler hat; the "threat" by a sinister looking character with cloak and dagger; the "technology" by a man in a white smock; and the "needs" by an officer resplendent in crash helmet and flying suit. In controlled quantities each provides his own particular input to the cauldron. Also by the cauldron is a planner with a hugh paddle agitating the brew, which is labeled "Studies and Analyses." Out of all this, the ingredients and the stirring, congeal golden nuggets called "System Concepts." The system concepts form the basis for proposals for new systems for the operational inventory and these, of course, are what we are after. Enough of my mirage of the world of planning.

Next, I would like to expound on a matter that centers on the word "plan". Many people state we would do much better if we just had a plan. My reply is that we do have one, it is called the Five Year Defense Program (FYDP) (formerly the Five Year Force Structure and Financial Program). The disbelievers invariably will scoff that the FYDP does not tell what the Air Force is to do even in the five years which it covers. Much less for the years succeeding! It cannot be regarded as a plan—certainly not a good one.

But I contend that the FYDP is a plan in the classical sense of the word. It tells, among other things, how those in charge of research and development are to allocate their resources to do battle in the technological race. The resources are manpower and dollars. Then there is the charge that the program is not a "long-range plan." It extends only for the next five years. True, it is very explicit in describing what resources are available to the Air Force for research and development for those five years. This, in turn, affects the posture of the Air Force for the next 20 years. So it is a long-range plan in terms of its lasting impact. The next rejoinder—that it is not a good plan—is a different subject.

If it is not, perhaps, a good plan, we arrive at my central theme; we are one step closer to the central issue. If you don't like it, change it. That is what planners are for, and changes are made by proposals to those that have the authority to make changes.

Then the heart of the matter is how to go about getting proposals approved. To repeat, changes in the plan can be accomplished only by initiating proposals and by obtaining OSD approval of them. I know of no other way.

Now the question is: By what process do we generate proposals that will change the plan? We think of this as a process having four separate categories of activities. The word "categories" to delineate development planning activities should not be confused with the six categories of Defense Research, Development, Test and Evaluation (RDT&E), that is, research, exploratory development, advanced development, etc. The categories for planning activities are these.

- **Category A**—Proposals for systems for the operational inventory. This activity involves a concept formulation package (CFP) to attain approval for contract definition.
- **Category B**—Proposals for advanced development programs.
- **Category C**—Mission analyses.
- **Category D**—Technology application studies.

I will describe each of these in turn.

Category A activities set up a stream of milestones having to do with developing and acquiring equipment for the operational forces. The last of these milestones is: "There is now an operational capability." The CFP is the means by which we hope to influence the high-level decision makers to grant approval for new starters, that is, to change the program. The primary objective is to convince the particular authority who controls resources that the system, equipment, or facility described in the proposal is the best means of alleviating an identified deficiency and that the increased capability afforded by this system is such that resources should be expended toward development. The CFP must contain the following essential elements:

- A description of the proposed system or facility.
- Its costs and schedules.
- The rationale as to why a particular design was selected and why it offers enough utility (increased operational capability) to justify that money should be reserved for development. This final argument also must include reasons for initiating development "now," generally the next fiscal year.

As stated earlier, concept formulation begins with the recognition of an operational deficiency. This deficiency may be expressed by an operational commander in a statement of a Required Operational Capability (ROC), as defined in Air Force Regulation 57–1, or orally, or by letter from a key person in USAF or OSD. The ROC need not be anything more elaborate than a statement by a key operational commander that, for example, our capability for night attack is quite deficient. In fact, a statement like this from a four-star general, with appropriate embellishments, is truly a ROC as distinct from a pebble.

Generally, the first step in preparing a CFP is to conduct Preliminary Design Studies. These further configure the system concept and describe that which is technically feasible. The Requests for Proposal should specify desired performance parameters, but never specify the design. Generally, the design will be based on technologies we have reasonable confidence in achieving. Further, the associated costs and schedules will be shown in considerable detail.

The Preliminary Design Studies that lead to a description of the system are generally contracted out to industry. The assessment of the utility of the proposals and the preparation of the overall CFP is an inside job, that is, the assessment of utility must be done by the Air Force. The selection of which particular design, among many, will be proposed is the responsibility of Headquarters, USAF, the operational command, AFSC and, finally, even higher levels of authority.

The rationale in the CFP must provide the basis for the Chief of Staff and the Secretary of the Air Force, or someone on their staffs, to persuade the Secretary of Defense, or someone on his staff, to approve the system and reserve money. The rationale should always be based on objective analysis. This does not mean that the planner cannot be a persuasive advocate. On the contrary, objective analysis is an integral part of advocacy. Being a seller and being honest are not exclusive options. Furthermore, persuasive advocacy must adhere to a policy of open disclosure in which all the evidence pertaining to the case is presented.

Based on the information contained in a CFP, money may be reserved in the budget for a new system or subsystem, but this does not necessarily constitute final program approval and release. Final program approval is obtained upon approval of the Preliminary Technical Development Plan (PTDP). The latter is a product of AFSC headquarters and AFSC divisions with inputs from the operational commands and industry. Final approval of the PTDP obtains release of the funds for engineering development, the first phase of which is normally contract definition. So Category A has to do with items for the operational forces.

The second category of the planning process—Category B—has to do with proposals for advanced development programs. Advanced development programs are designed to demonstrate technical feasibility and to establish the confidence level in an experimental system or equipment which eventually may be incorporated into some system for the operational inventory. Such a proposal should contain:

- Description of the proposed demonstration and technical approach.
- Costs and schedules.
- Rationale which includes the potential payoff if the equipment works; why the particular technical approach was selected; and why it should be done now and not at some later date.

(You will note the proposal for advanced developments bears a strong resemblance to proposals for Category A systems—operational systems.) Advanced development programs end when they succeeed! This is sometimes lost sight of and people are loathe to stop their program when their success rate is high. But exploitation of the technology is taken care of by Category A type activities.

The third category—Category C—has to do with mission analyses. Here we examine in depth some particular operational mission or function such as night attack, or strategic reconnaissance, or surveillance. The objective is to identify new promising system concepts or equipment that will improve our operational capability in the mission area being studied. Mission analyses provide one of the forcing functions for directives to initiate a Category A activity—develop a proposal for an operational system—or a Category B activity—develop a proposal for an advanced development program—or for both, concurrently. They may also provide a focus for new technology efforts (exploratory developments). Mission analyses can be conducted by personnel from Headquarters, USAF, the operational command, Headquarters, AFSC, an AFSC division, or a task force composed of representatives of any or all of them, including personnel from industry. The responsibility for initiating and organizing task force efforts rests with Headquarters, USAF, or with Headquarters, AFSC.

Category D activities are called technology application studies. In such studies, a specific technological advancement, such as the laser, is examined to determine possible useful applications to various operational missions or functions. In Category C one knew the problem and was looking for a solution. In this category, Category D, one has the solution and is looking for the problem. Technology application studies also provide a basis for directives to initiate a Category A activity or a Category B activity, or both. In addition, Category D studies may provide a basis for re-orienting existing major programs. Primarily, this activity is conducted by AFSC divisions, centers, laboratories, or task forces.

In both Category C and D activities, technical personnel are heavily involved. They bring to these groups an understanding of what is possible. The planner marries them to operational people who have an understanding of what is useful. The offspring is, hopefully, new system concepts. Thus Category C and D activities provide forcing functions for the generation of new proposals; Category B activities provide the technical base for Category A activities. Category A activities provide the basis for getting things into the operational inventory and, after all, this is the final payoff.

The key question in each category is: "What end result is expected of this activity?" If the desired result is to provide a basis for decision to proceed with contract definition and subsequent full-scale development and deployment, a CFP must be drafted and assembled. If demonstration of feasibility is the problem, the project is an advanced development and the demonstration must be described. From a mission analysis or technology application study we expect to identify new system concepts that are worthy candidates for a Category A activity generating a firm proposal for an operational system.

A new project must be constructed with one eye always upon the objective of its incorporation in the FYDP. The decision maker, who gives the go-ahead on new starters and controls the allocation of resources, is at a high level in the DOD hierarchy. All planning activities should be geared to convince him that he should first reserve resources (and eventually release these resources) to accomplish the program that is proposed. The only recognizable measure of success for the planner is the approval of a "new starter," one that will provide effective equipment to the operational forces on a timely basis.

Obviously there are other ways to view the planning process. But the adoption of a common terminology which avoids imprecise and ambiguous terms is essential. Asking, "What is expected?" and then carefully identifying the effort as being in one of the four categories will leave no doubt as to what is intended. As a much-needed management tool, we do exactly this by always asking, "What Category?"—"What do you expect?"

But to remind you, our greatest challenge is to harness the technology we already have or which is in the offing. There are many opportunities for improvements—improvements with large systems or with small subsystems. To recite a few:

- We would like to have the capability of preventing enemy re-entry vehicles with nuclear warheads from impacting on the United States.
- We would like to be able, in turn, to have high assurance of penetrating enemy defenses with our re-entry vehicles and aircraft.
- We need the capability to detect enemy personnel, trucks and equipment wherever they might be even when hidden beneath jungle canopies or in caves.
- We would like the best fighter in the world for air-to-air ground missions, to improve the circular error probability (CEP) of the weapons delivered and be able to deliver these weapons in darkness or adverse weather.
- We would like the ability to prevent ambush by having the capability of detecting the presence of other humans that might be nearby.
- We would like to know the whereabouts of all friendly and enemy forces on a continuing basis, and in real time, and the capability to distinguish accurately between them and to communicate quickly and without error to the friendly ones.
- We would like to reduce the vulnerability of aircraft (and missiles) prior to launch from attack by enemy forces.
- We would like to be able to stop the movement of enemy troops and supplies while at the same time have our own lines of communications secure.

In short, we would like to be able to search out and destroy the enemy in all circumstances and environments without undue loss to our forces. The appetite of the military is insatiable. We are really never satisfied with the state of the art nor should we be. We have a universal requirement for systems that cost nothing, are completely reliable, have infinite range and speed, are invisible, have a zero CEP, and can be operated efficiently by Air Force personnel.

The enumeration of ROC's, as I have just done, is without meaning or impact unless we find out what technology can provide and generate new system concepts, and obtain approval and funding. The Air Force can operate only that which OSD funds and the engineers build. The challenge is to be absolutely sure that we develop and procure the best systems that technology can provide at that time. By exploiting technology you do not use it up. It is like knowledge. The more you exercise it the more you have. It is a self-feeding process. One forcing function for better technology tomorrow is to put to use the technology we have today. This requires a thorough mixture of many ingredients in the witch's cauldron that beget proposals that change the plan that begets systems that improve our posture. This is a stern challenge but the rewards are large.

Address by Capt. Joseph L. Howard, SC, USN, (RAdm. selectee) Dep. Chief of Naval Material (Procurement), at the 10th Annual Seapower Symposium, Navy League of the United States, Washington, D. C., Feb. 8-10, 1967.

Capt. J. L. Howard, SC, USN

Current Points of Emphasis in Navy Contracting

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The Navy today is depending more and more on industry for an ever-widening range of its needs, for the development of new ideas, for the production of its weapons and equipment, and for services in support of existing weapon systems.

Therefore, the contract itself, as a working document, is becoming more important than ever before. Indeed, it is becoming one of the Navy's prime instruments of administration, in research, development and production programs.

Because of this, we are giving our contracts more attention than ever before.

We recognize the importance of making awards smartly and properly in the first place. But we also realize that the contract instrument must establish a working relationship that remains sound throughout the life of the contract.

In serving these purposes, we are giving special emphasis to certain points in our contracting programs. It is important that we all have a good understanding of the implications of the contractual instrument, and what it involves in terms of commitments by both parties.

It is in this light that I would like to touch on some points of current Navy emphasis in contracting.

Risk. First, on the question of risk. It is general Defense Department policy, in contracting, to shift risks more and more to the individual contractors, and then reward them accordingly for successful accomplishment of all contract commitments.

The financial risk for the contractor, of course, is what normally comes to mind when we think of risk.

However, of major importance to the Navy is the technical risk involved in achieving the quality, performance and reliability standards called for in the contract.

We in the Navy are now looking for better balance between financial and technical risks in our contracts today. We will be making more astute assessments of such risks in the future.

We do not want our contractors to shave on performance in order to save on dollars. This means that potential contractors themselves must make more astute and competent assessments of all risks.

When a company contemplates going into a Navy contract, it should look carefully at the technical risks, and then price out the situation accordingly. Naturally, we want the best possible prices, and this is why we encourage competition. But whether competitive or not, the technical risks involved are going to come in for more harsh scrutiny than ever before.

When you look over our programs, ask yourself whether the Navy's requirement calls for a scientific breakthrough, or a technological quantum jump, or some revolutionary production technique, or some wholly new approach to test and evaluation.

On our side of the table, we are going to sharpen our own awareness of the technical risks involved, and this will have a bearing on source selection, and the selection of contract type.

This brings me to my next point.

Responsibility Determinations. We are placing heavier emphasis on proper determination of company responsibility.

Again, as in risk, when we think of responsibility determinations, certain standard, routine ideas come to mind. When we say we will not deal with marginal suppliers, the standard thought is that we are talking about neighborhood bicycle shops or shoestring ventures.

Actually, the question of responsibility can be raised in connection with some of the giants of industry, some of the best known companies in the country.

The Armed Services Procurement Regulation requires that the contracting officer make a positive and affirmative determination that a company is responsible before an award can be made.

In addition to financial resources, the contracting officer must consider the company's current plant load, its ability to take on more work, and its past record of performance and integrity on other Government contracts.

Also, we must consider the company's organization, experience, operational controls, and technical skills to do an effective job in a complex weapon system program.

In this connection, we are giving hard looks at company management, laboratory resources, engineering staff, production and test facilities, and whether it has voids and gaps in certain disciplines that are essential to the program under consideration.

We will be using the Contractor Performance Evaluation reports more fully now, since this program is constantly developing more and better information for us.

There is one further policy point that is pertinent here. The burden of proof for establishing the responsibility of a prospective contractor lies ultimately with the prospective contractor himself, not the contracting officer.

If a contracting officer is convinced that a particular company does not have the organization, the staff, or the know-how to meet complex commitments under contract, and if the company disagrees, it is up to the company to show that it has the necessary capabilities or can obtain them readily.

Contract Type Selection. A third area of emphasis in our contracting programs is in the selection of the proper type of contract for the situation involved.

We have been shifting rapidly in the last two or three years from cost-plus-fixed-fee (CPFF) contracting, and we now believe that 10 percent of our procurement dollars in CPFF contracts is about right.

We are now reviewing our experience under various types of contracts. We are taking a critical look at progress under these contracts and evaluating the results to date.

We are trying to determine the relationship of contract type to the quality of contractor performance.

We believe, for example, that some of our cost-type contracts might better have been fixed-price type. On the other hand, we have some fixed-price types that might better have been of the cost-type.

We will not be making any dramatic changes, either in policy or approach, as a result of these reviews. But we do regard the type of contract a matter to be determined finally during negotiations.

Those of you who have done business with the Navy in the past know that normally we have an idea of the type of contract we think is appropriate. The Request for Quotations will often state what kind of contract we expect to end up with. However, this is not firm. We recognize that information may come up during negotiations to indicate that a different type of contract is best suited to the procurement at hand.

In short, we are going to be more discriminating in our choice of contract type in the future, and we consider it a matter for negotiation.

Developer/First Producer. Another area in which we are giving emphasis in the Navy is in the developer/first producer policy.

The Armed Services Procurement Regulation allows us to direct the first production of a product to the original developer. We in the Navy are pushing this approach.

We are convinced that competition is the spark of progress in our country, and we hold to this policy above all others.

However, we also recognize that in some of our major programs, we can do ourselves a disservice if we go into competition prematurely.

Some of our problems of the past have come from the fact that we have tried to get competition by the use of data packages which reflected only a developmental effort. We have found that without on-going production experience, a data package simply may not be an adequate basis for competitive production contracts.

This is not always true, of course. But it is true often enough to make it necessary for us to look very closely at each situation and decide when is the appropriate time to get competition into the picture on a new system.

If we can get competition at an early design stage, fine. On the other hand, if a system is designed and developed by a single company, chances are that company will also get the first production contract under current Navy policy.

We believe that our emphasis on the developer/first-producer policy will result in our getting more realistic data packages, packages that give us a sounder basis for competition for second and on-going production programs.

Quality Control. Another area we are stressing is quality control. This relates to the selection of contractors in the first place, and it is a matter for closer scrutiny during the administration of our contracts.

Here is an area where industry can make perhaps the greatest possible contribution.

We are not talking here about quality in the sense of gold plating, using platinum where tin will do. We are talking about the thousands of simple, routine tasks that go into putting a complex weapon system together, and making sure it works.

In the final analysis, quality work comes from within the individual man, the individual engineer, technician and workman on the bench. It comes from a man's pride in what he is doing, his attention to the details of his job, his inner desire to turn out a piece of work that is flawless.

We have had too many cases of aborted tests, and aborted operational runs, where the system failed simply because someone didn't tighten a screw properly, or a circuit weld was poorly done, or a plate was put in backwards, or left out entirely.

Quality control is one of our most critical concerns these days. We are going to examine a company's past performance in this area more closely before we make a final award in the future. And, after awards are made, we are going to be hammering hard on the maintenance of a strong, thorough company quality control system.

Design Simplification. Another area that is receiving increasing attention is in the simplification of equipment designs.

It is bad enough when a piece of equipment breaks down for poor quality work. But when this happens and then the equipment is too complicated to fix on the spot, this is wholly unacceptable.

A lot of good has been done along these lines in the past couple of years, but there is yet much to be done.

In the Navy we are putting more stress on the use of incentives in our contracts to encourage design simplification without degrading product performance and quality. We are trying to develop ways to say, in effect, the simpler your design for maintainability and parts support purposes, the more profit you will make.

These elements are not easy to quantify, we realize. But we have been working closely with industry through various joint efforts, conferences, working committees and task groups, and I mention it here to reaffirm the emphasis we are placing on this subject.

Standardization. Standardization is another area in which we are placing heavy stress, particularly in our shipbuilding programs.

The range and variety of equipments, components and parts we use in the Navy have become a matter of real concern in terms of material management, maintenance and support. Not only is it a matter of economic concern, but also it is of operational significance.

We are, therefore, structuring our contracts these days with incentives to those companies who are able to offer us equipments for which we already have parts in stock.

We are, of course, balancing this against the need for continuing technological progress. We certainly do not want to standardize on things that are obsolescent when something better is available. But where designs, configurations and performance are not subject to quantum-jump improvements, we are looking for greater standardization, both for economic and operational reasons.

Life Cycle Costing. Another point of emphasis in Navy procurement programs is in the area of life cycle costing.

Without dwelling on details here, this is a technique by which we quantify certain elements of the cost of ownership of a piece of equipment. Rather than make an award solely on the basis of initial cost to us, we are developing factors by which we can evaluate the cost of owning the item throughout its life cycle.

For example, we have developed some dollar value factors to measure mean time between failure, to measure the cost of spare parts support throughout the life of certain equipments, to measure the cost of operating the equipment, fuel costs, for example.

We have used this technique in buying diesel engines, batteries, electronic resistors, generators and similar items.

We expect to apply these techniques during the coming year to sonar equipment, gyro indicator systems for aircraft, air coolers, electronic test equipments and others.

There are two points of significance to be emphasized here.

First, we have started on relatively simple items in order to establish a sound conceptual base for this technique. We are now moving progressively into more complex items.

Second, although it appears that these factors are applied only to relatively minor component items, as distinguished from the big complex weapon systems, we are, in fact, applying these techniques in the assessment of awards on some of the big systems as well.

In the FDL total package program, for example, life cycle cost factors in connection with shipboard equipments and components are being applied as part of the evaluation process.

Here again, we solicit industry suggestions and ideas on what elements of life costs we should consider, and how these can be quantified for evaluation purposes.

These are three other aspects of our procurement programs that the Navy is stressing, and I would like to touch on these only briefly.

Advance procurement planning is becoming a way of life for us now. We are injecting procurement and logistics considerations into the earliest possible planning and program decision processes.

Administrative procurement leadtime is another matter that is receiving concentrated attention in the Navy today. We believe that advance procurement planning will help in this regard, but we are also taking actions to sharply reduce the time it takes to make a contract, once the program is funded and approved.

Personnel training is the third area to be mentioned only briefly. We recognize that there are some gaps between our policy pronouncements and what comes out in actual practice across the negotiating table.

We will be concentrating this year on more astute application of weighted guidelines, more discriminative use of the incentive provisions, more care in dealing with the question of data rights.

Generally, we look to 1967 as a year for consolidating many gains made over the past four years in new, sophisticated procurement techniques.

We believe we have the tools in procurement now that can help us make better contracts than ever before. Our job this year will be to refine our skill in using these tools.

We want our contracts to be good ones. We believe that a good contract is one that satisfies both parties. It gives the buyer exactly what he asked for, when he wanted it, at a price he considered reasonable, and was willing and able to pay.

At the same time, a good contract should give the seller the satisfaction of producing something useful, with the requisite quality, for a reasonable profit, plus the creation of a satisfied, steady customer.

The ultimate object, of course, is to keep the Navy strong, trim and combat-ready, to insure that the United States remains a powerful force for freedom throughout the world.

The industry-Navy team makes a monumental contribution to the achievement of that object. The binding element for that winning team is the contract. For this reason both the Navy and industry must continue to work hard to make our contracts good, sound, working documents that assure the delivery of superior weapon systems, on time, and at prices the national economy can afford to pay.

Calendar of Events

May 2–3: National Security Industrial Assn. Seventh Innerspace Conference, Washington, D.C.

May 3–5: Electronic Components Conference, Washington, D.C.

May 7–12: Electrochemical Society Meeting, Dallas, Tex.

May 7–12: American Society of Civil Engineers Meeting, Seattle, Wash.

May 8–10: Fludics Symposium, Lafayette, Ind.

May 8–13: Mechanical Contractors Assn. of America Meeting, Kansas City, Mo.

May 10–12: American Helicopter Society Meeting, Washington, D.C.

May 11: American Ordnance Assn. Meeting, Washington, D.C.

May 11: National Defense Transportation Assn. Meeting, Fort Eustis, Va.

May 15–18: Society of Plastic Engineers Meeting, Detroit, Mich.

May 16–18: National Telemetering Conference, San Francisco, Calif.

May 20: Armed Forces Day.

May 22–25: American Insitute of Aeronautics and Astronautics Advanced Marine Vehicles Meeting, Norfolk, Va.

May 26–28: Empire State Labor Management Exhibition, Roosevelt Raceway, Long Island, N.Y.

June 6–8: Armed Forces Communications-Electronics Assn. Meeting, Washington, D.C.

June 8–11: American Battleship Assn. Forth Annual Reunion, Las Vegas, Nev.

June 11–15: American Nuclear Society Meeting, San Diego, Calif.

June 12–14: American Institute of Aeronautics and Astronautics Commercial Aircraft Design and Operation Meeting, Los Angeles, Calif.

June 19–21: Heat Transfer and Fluid Mechanics Institute, La Jolla, Calif.

June 20–23: Data Processing Management Assn. Meeting, Boston, Mass.

June 20–26: Society of Nuclear Medicine Meeting, Seattle, Wash.

June 25–30: American Society for Testing Materials Meeting, Boston, Mass.

June 28–30: Joint Automatic Control Conference, Philadelphia, Pa.

Military Prime Contract Awards by Commodity Category

[*Editor's note: Below is a table of military prime contract awards for the first eight months of FY 1967. The contract information in the summary is broken down by major commodities for the current fiscal year and includes, for comparative purposes, corresponding information for the same period in the last fiscal year.*

These summaries have heretofore not been released in this form. In the future DOD plans to periodically release similar procurement summaries and they will be published in the Defense Industry Bulletin *when available.*]

(Amounts in Millions)

	July 1966 Feb. 1967	July 1965 Feb. 1966	Net Change
Aircraft	$6,530	$4,377	$2,153
Missile and Space Systems	2,916	3,025	−109
Ships	1,622	706	916
Tank-Automotive	681	817	−136
Weapons	325	219	106
Ammunition	1,868	1,460	408
Electronics and Communications Equipment	2,223	1,905	318
Other Hard Goods	1,581	1,184	397
Hard Goods (Sub-Total)	17,746	13,693	4,053
Subsistence	742	676	66
Textiles and Clothing	836	585	251
Fuels and Lubricants	933	726	207
Soft Goods (Sub-Total)	2,511	1,987	524
Construction	512	569	− 57
Services	2,544	1,790	754
All Actions under $10,000 each	2,561	2,195	366
Total[1]	$25,874	$20,234	$ 5,640

[1] Excludes work done outside United States and also excludes civil functions (rivers and harbors work) of the Army Corps of Engineers.

Procurement during February, 1957, totalled $3.2 billion compared to $2.4 billion for February 1966. Large individual contracts placed during the month of February 1967 include: Avondale Shipyards of Louisiana, $109 million for destroyer escorts; National Steel and Shipbuilding of California, $161 million for landing ship tanks (LST's); Philco Corp. of California, $59 million for Shillelagh missiles; A R O, Inc., of Tennessee, $103 million for maintenance and operation of the Arnold Engineering Development Center; and General Dynamics of Texas, $195 million for aircraft.

U.S.-Canadian Logistics Cooperation

by
Lansing R. Felker
Office of International Logistics Negotiations
Office of Asst. Secretary of Defense (ISA)

Historically, the United States and Canada have enjoyed a gratifying and remarkable degree of cooperation in defense logistics—a cooperation both pervasive and varied. For example, the United States provides engines and other equipments equivalent to 40 percent of the value of the Canadian CV–7A Buffalo aircraft. The XM–571 tracked vehicle, which is a joint U.S.-Canadian development, incorporates a U.S. engine, transmission and other components. Canada provides subcontractor assistance to U.S. firms for the C–5A transport aircraft and the F–111 tactical fighter.

U.S. manufacturers have licensed Canadian companies to produce U.S. equipment. Canada produced 240 CF–104's for its own use and 140 F–104's for a joint U.S./Canada Military Assistance Program, under license from Lockheed. Canada produced the Mark 44 torpedo under a General Electric license and is currently starting a $200 million CF–5 program of production in Canada, under license from Northrop, a program which will involve a U.S. input of more than 30 percent on a program basis. Canada has also been a good customer of the United States in terms of direct purchases. These have included the M–109 155mm self-propelled howitzer, CHSS–2 ASW helicopters (assembled in Canada), about 1,200 M–113 armored personnel carriers and 24 C–130 transport aircraft. In addition, many U.S. companies have subsidiaries in Canada. Examples are Canadair, owned by General Dynamics; United Aircraft of Canada, Ltd., which handles all of United Aircraft's piston engine work world-wide; RCA which accomplishes plasma physics for DOD and NASA; and Litton (Canada), Ltd., which provides inertial platforms for U.S. aircraft guidance systems.

This unique defense logistics cooperation between Canada and the United States is currently formalized in the Production Sharing Agreement. This most recent formalization of the continuing relationship, founded in World War II and first expressed in the Hyde Park Agreement of April 1941, is based on the recognition of:

- The naturally close economic relationship between the two countries.
- The mutual interests in North American continental defense.
- The complementary relationships of the two defense industries.
- The necessity for some planning so that this relationslhip realizes maximum benefits for both countries.

The goal of this cooperation is to gain maximum advantage from both defense industries by overcoming, through management, the natural inequalities between the United States and Canada resulting from disparity in size of the two defense industries and the two defense establishments. This has been accomplished through:

- Coordination of U.S. and Canadian military requirements and production.
- Removal of obstacles to reciprocal procurement and flow of defense goods between the two countries.
- Developing channels for the regular exchange of defense planning and technical information between the United States and Canada.

This cooperation had its first major implementation during the total defense mobilization of World War II when production planning first became necessary. Then, in February 1952 as the result of the demands of the Korean War, an agreement was entered into between the Canadian Department of Defence Production and the U.S. Military Departments authorizing the Military Departments to place contracts with Canadian firms through the Canadian Commercial Corporation (a Canadian government agency), and prescribing provisions relating to foreign exchange, inspection, profit limitation, surcharges, administrative costs, use of Government-owned tooling and facilities, reciprocal audit arrangements, and other administrative matters.

In Canada, the Department of Defence Production was established in 1951 to centralize the procurement of goods and services on behalf of the Canadian defense forces and, as an adjunct to this principal role, to help restore and maintain an effective defense industrial base. By selective procurement policies, Canadian firms directly involved in the manufacture of defense equipment and the aircraft industry, in particular, were raised to a viable level. Capability was developed for production of selected aircraft, aircraft engines, a number of radars, sonar and sonobuoy equipments and many types of communication equipment, and orders for these items were obtained from the U.S. Military Departments. In short, while Canada continued to look to the United States for a substantial part of its military requirements, it had during the period from 1951–58 organized its defense industry so as to be capable, on a selective basis, of meeting U.S. requirements and competing with U.S. and other defense markets.

It is clear that not only the concept of production sharing, but also the necessary industrial base and a complex of working arrangements and procedures had been established before 1958 for the purpose of promoting cross-border military procurement. In 1958 the Canadian government had a new interest in stepping up production sharing to levels comparable with those attained previously during World War II and the Korean hostilities. This interest resulted from the decision of the Canadian government in September 1958 to curtail the CF–105 supersonic interceptor aircraft program and to introduce the U.S.-designed and produced Bomarc missile and SAGE control equipment into the Canadian air defense system.

In view of its limited financial resources and the complex technology of advanced weapon systems, Canada did not have the capability and could no longer afford the costs and risks inherent in independently undertaking other development and production programs of such magnitude. Instead, Canada decided to rely on the use of U.S.-developed major weapon systems. At the same time, both the United States and Canada recognized that the decisions required of the Canadians were economically and politically impracticable unless reasonable opportunity was provided Canadian defense industry to participate in the production of components and equipment required not only for the then newly integrated air defense weapon systems but also for other weapon systems developed in the United States for the common defense.

Based on the logic of the 1958 agreement, the Production Sharing Agreement has developed into a smooth working machinery of cross-border procurement which has averaged over $150 million per year each way during the period 1959 through 1966. The United States has placed the majority of its business in Canada directly through prime contracts, both government-to-government and government-to-industry, although subcontracting from U.S. industry to Canadian industry has tended to increase steadily. On the other hand Canada has placed the great majority of its orders in the United States through subcontracts on the industry-to-industry level. This high Canadian subcontract level results partly from the Canadian interest in keeping industrial management talent and from the number of Canadian purchases that are channeled through Canadian subsidiaries of U.S. firms.

Through 1966 the procedures of the Production Sharing Agreement have been aimed primarily at providing Canadian manufacturers with competitive access to the U.S. defense market, so that Canada could balance its defense expenditures in the United States. Canada has successfully maintained selective competitiveness in certain areas of defense production, while giving up its capability entirely in others. To date Canada has achieved this goal to the extent that the cumulative cross-border defense balance between the two countries since 1959 is about $200 million in Canada's favor, i.e., the United States has spent almost $200 million more in Canada than Canada has in the United States. This fact is not surprising in view of the disparity in the U.S. and Canadian defense markets ($50 billion-plus U.S. defense budget compared to a Canadian defense budget of less than $2 billion), the relatively greater integration of the Canadian government/industry machinery (The Canadian Department of Defence Production and the Department of Industry are headed by the same Minister), and the strong emphasis placed on the program by the Canadian government. Joint research and development programs are also important to the success of the program and a number of such programs are in being. The Canadian government also funds, on its own, research and development programs with the end objective of meeting U.S. military requirements of the future.

The Production Sharing Agreement has successfully introduced Canadian manufacturers to the U.S. defense market and the machinery of that agreement is being constantly adjusted so that a relative balance of cross-border procurement will be achieved at the highest practicable economic level. Current discussions are producing a greater access by U.S. manufacturers to the Canadian market and projections of cross-border spending show an estimated increase in annual spending of 50–75 percent over past averages. Future spending by Canada in the United States should include equipment for the Canadian Mobile Force, especially transport aircraft, helicopters and ground vehicles. In short, the Production Sharing Agreement between the United States and Canada has proved the workability of close cooperation between defense establishments and defense industries, even between countries of large disparity in population size, where there is a commonality of purpose in mutual defense.

DEFENSE PRIME CONTRACT AWARDS TO SMALL BUSINESS

(Amounts in Thousands)

	July 1966 Jan. 1967	July 1965 Jan. 1966
Procurement from All Firms	$22,338,108	$17,746,810
Procurement from Small Business Firms	4,579,409	3,750,409
Percent Small Business	20.5	21.1

Research in the Air Force

(*Continued from Page 18*)

ranging. These are just a few across-the-board examples. Space does not permit me to elaborate further.

A question often asked is, "How is fundamental research managed in a military command?" It's a good question—the answer is really simple.

First, we stress quality research, not quantity research. Our guiding policy is what we do, we do well. To obtain this quality research we apply five management concepts. They are:

- Centralized command at OAR headquarters.
- Centralized planning and definition of research objectives—with inputs from the field elements.
- Creative environment for our researchers.
- Stabilized support for scientific investigations.
- Decentralized program management.

As the commander of OAR, I am responsible for exercising executive line management over all elements and I am, of course, responsible for the effectiveness of research and for the use of the resources of the command.

At OAR headquarters we do the long-range planning, try to protect the field elements from the multitude of requirements which are so often handed down to lower echelons these days, and we make an honest effort to provide the tools OAR scientists need to do the job.

OAR field commanders are expected to devise and operate their own technical programs. It is their responsibility to provide an environment in which quality research can flourish and allow scientists freedom to conduct research without unnecessary hampering.

I believe that in OAR we have achieved an unusual balance between central policy control and decentralized program management. We are very proud of this research management policy which we believe is unique in a military organization and has resulted in many outstanding accomplishments.

Basic research provides new scientific knowledge on which applied researchers draw to give society a rich rate of interest. No investment has ever paid off so well as the investment in basic research.

We welcome research proposals from any competent source.

Oceanography in the Navy Today and Tomorrow

by

RAdm. John K. Leydon, USN

The oceanographic program of the Office of Naval Research (ONR) has traditonally been the main source of support for oceanography and related technology in the academic and institutional community. This ONR role essentially grew from the Navy's close working relationship developed with the major oceanographic institutions in World War II. In the decade immediately after the war, in particular, the Navy was essentially the sole Federal support for these oceanographic institutions. Even though other agencies, such as the National Science Foundation (NSF), have since undertaken to support work in the leading institutions and universities, the Navy still remains the backbone supporter.

With the strong scientific capability in oceanography being concentrated at institutions and universities, the ONR contract research program has been developed to allow utilization of this competence within the Navy. ONR has developed a strong external research program and the commands of the Chief of Naval Material have undertaken to develop an in-house laboratory capability to meet individual Navy laboratory needs.

In assuming this role for the external research program of the Navy, the ONR oceanography program has had a tremendous impact on the national oceanographic effort, particularly in the past decade. The upsurge in oceanography in the United States began in the late 1950's. One contributing factor in this upsurge was the U.S. participation in the International Geophysical Year (1957–58) of which the oceanographic program was a significant part. This program marks the awakening of interest in oceanography; however, subsequent actions have had a greater impact.

Within the Navy, ONR initiated the first long-range planning document for oceanography, known as TENOC, which was endorsed by the Chief of Naval Operations on Jan. 1, 1959. As a result, it became Navy policy to promote and support oceanography more vigorously. Almost concurrently with the internal TENOC document, the National Academy of Sciences' Committee on Oceanography published its far-reaching report, "Oceanography 1960 to 1970," in February 1959. This committee was organized at the instigation of the Chief of Naval Research. The Navy, in implementing TENOC, was also fulfilling most of the recommendations of the National Academy of Sciences' Committee on Oceanography. With Dr. James Wakelin, the Assistant Secretary of the Navy for Research and Development, serving as Chairman of the Interagency Committee on Oceanography, the Navy assumed the Federal leadership in the resulting period of national expansion in oceanography.

Within the Navy and the national program, ONR assumed major Federal responsibility for developing the academic and institutional capability in oceanography. Research programs by new groups were initiated, graduate student training was encouraged to meet critical manpower shortages, new facilities were provided, and new avenues for research and methods of attack were encouraged. Specifically, ONR has been largely responsible for the establishment of the oceanographic programs at John Hopkins University, Texas A&M University, Oregon State University and Massachusetts Institute of Technology, as well as for the expanded efforts at the University of Rhode Island and the University of Miami.

In addition to establishing new programs, ONR also assisted appreciably in building up the capabilities of the Scripps Institution of Oceanography, Woods' Hole Oceanographic Institution, Lamont Geological Observatory, New York University and the University of Washington.

RAdm. John K. Leydon, USN, is Chief of Naval Research, Department of the Navy. Some of his prior assignments have been Dep. Chief of Naval Material (Management & Organization; Dep. Comptroller, Navy Department; and Commander, Naval Air Turbine Test Station, Trenton, N. J. Adm. Leydon is a graduate of U. S. Naval Academy, and holds a degree of Master of Science in Aeronautical Engineering from the California Institute of Technology.

Besides providing the financial support for research and essential operating costs, ONR has enhanced these laboratories by providing some nine ships through new construction or conversion. At present, a fleet of some 28 ships, operated by private laboratories and jointly funded by Federal agencies, receives nearly 50 percent of its support from ONR, the largest portion of which comes from the Ocean Science and Technology Group of ONR. Many specialized facilities such as deep sea research vehicles, four-engined research aircraft, telemetering buoys and stationary towers also have been developed by or made available to these research groups through ONR. Even though the original TENOC and all subsequent revisions have called for the construction of facilities at the private institutions, the program in general has been unable to meet this commitment over the years. However, buildings have been constructed at Johns Hopkins University's Chesapeake Bay Institute and Columbia University's Lamont Geological Observatory with ensured support from ONR; other limited funding has been provided for pier facilities at both Scripps and Woods Hole Oceanographic Institutions.

While the ONR program has been mostly oriented towards the development of U.S. groups, its contributions to the field of oceanography have not been limited to domestic programs and capabilities. In a science which promotes a great deal of cooperation among nations, ONR has played a significant role in developing international programs and groups with the belief that their improvement will contribute knowledge of the oceans of value to the Navy. For example, the highly productive geophysics group under the direction of the late Dr. Hill in the United Kingdom received its impetus and sole support during its developing years from this program. In addition, lesser developed nations, in Latin America particularly, have received support. Most of the latter has been through cooperative programs with the U.S. groups sponsored by the ONR program and through international programs such as the IGY (International Geophysical Year), ICITA (International Cooperative Investigations of the Tropical Atlantic) and IIOE (International Indian Ocean Expedition).

The most readily identifiable accomplishments of the program are tangible items such as facilities, ships and manpower as this has been a period marked with program growth. However, the program has been equally, if not more, important in advancement of the science of oceanography. In the last decade, the field has progressed from one largely descriptive in nature (asking what) to one of carefully designed experiments and expeditions to study specific phenomena (asking why). In addition, the program has had many accomplishments of significant and immediate value to the Navy and has provided a wealth of scientific and operationally important information to the operating environment of the Navy.

Some of the more readily identifiable contributions to the Navy from this program include the fundamental ocean wave research effort from which has been developed the Navy Oceanographic Office ship routing and wave forecasting programs. The most complete library of bio-acoustic sources in the United States has been compiled as a part of the long-term support of a program to identify and catalog such background in the ocean. This library has been the source of valuable information to the operating forces. The present deep research vehicle program in the Navy received its initial start in this country through the ONR program. ONR personnel participated in the work of the bathyscaph Trieste off Italy in 1957 and later brought it to the United States and developed interest for its use in this country for research. This was the only deep rescue vehicle available for the Thresher search, in which most of the participants were laboratories sponsored by the ONR contract research program. The methods used by these groups in the search were direct applications of equipment developed under the research program and represented the forefront of the state of the art at that time. Most of the geophysical methods being employed in the present extensive Navy Oceanographic Office Marine Geophysical Surveys (MGS) program were also either developed or improved under the ONR-sponsored oceanography program.

These are a few of the direct benefits of the program to the Navy. Other scientific results are presently but a step from Naval applications and will require further pursuit or translation to specific Navy needs. Among such efforts is the long-range buoy development. The Coast Guard is already adapting the ONR-sponsored Convair buoy system as a replacement for light ships and Navy buoy programs likewise will benefit from this systematic development program.

The new study of oceanic dynamics, ranging from descriptive studies of current systems to the development of models to describe oceanic motions, will significantly contribute to the Navy's environmental forecasting efforts. These efforts are only in their infancy.

The scientific content of the oceanography program also has undergone shifts in emphasis over the years. Originally so little was known about the oceans that broad-scope programs were encouraged to obtain an adequate description from which meaningful questions could be asked and models of phenomena developed. Support for an oceanography effort of wide scope will continue to provide basic knowledge about the oceans to meet future Navy needs, but the relative emphasis of areas of research have been more sharply defined over the years. The physical oceanography and marine geophysics have been emphasized as being of most immediate interest to a wide variety of Naval applications. The marine geophysics area, in particular, has received increased emphasis because of its growing importance to undersea warfare. New programs were initiated at the Graduate Center of the Southwest and the University of Hawaii, and the effort of the Lamont Geological Observatory has undergone considerable expansion. More recently greater emphasis has been placed on air-sea interaction in response to a recognized need for increased effort in this area as noted by both the Academy of Sciences and the Interagency Committee on Oceanography (ICO). Among the areas receiving less relative emphasis in the physical oceanography program have been biological oceanography and geochemistry.

Large coordinated programs also have been commenced. The Convair buoy project and other associated programs, such as that for sensor package development at Bissett-Berman and mooring line studies at General Motors, are examples of such programs. The developing oceanic dynamics program is another example, but involving more directly scientific groups. It is anticipated that the trend towards such coordinated problem-oriented projects will increase.

In order to keep a dynamic program, new projects are started each year and others phased out. The number of new starts varies annually depending on available funds, long-term commitments, and rate of project turnover. New starts have amounted to 10–15 percent per year. These have included new contracts and the addition of new tasks to existing contracts.

The increased efforts by most of the other Federal agencies, because of their in-house nature, have not significantly affected either the scientific content or groups supported by ONR. The NSF, with a somewhat comparable role for supporting oceanography, has provided facilities and supporting research at an increasing rate and, as noted before, is being looked to for broad institutional support. Rather than being a duplicating effort, however, the NSF program has provided many facilities not available to the ONR program. Much oceanographic research is exceedingly expensive, particularly when ship support is considered. Therefore, selected, jointly supported efforts of considerable research value to the Navy and the nation can be obtained which, because of their cost, might not have been otherwise supported within the budget limitations of a single agency.

Besides NSF, the Atomic Energy Commission is the only appreciable supporter of research at the institutions and universities. Its program is, in general, conducted by selected groups which are concerned with fallout and diffusion problems. The newly emerging Environmental Science Services Administration (ESSA) has a limited in-house research effort which, in some cases, is cooperating with several on-going ONR oceanography programs, the most noticeable of which is the Gulf Stream investigation. Because ESSA has been assigned responsibility for tsunami (tidal wave) warning, the previously supported ONR work at the University of Hawaii has been taken over by that agency through mutual agreement.

Oceanography, using the very broad definition accepted by the Panel of the President's Science Advisory Committee, is as stated in its report, a field of activity in which it must be expected that the Navy, more than any other agency of the United States, will continue to be active.

Engineering to do new types of jobs, or to do old types better, will continue to demand a heavy effort. In partnership with industry, the Navy is advancing the field rapidly as is the petroleum industry. Each has its own peculiar problems which demand solution, but benefits from interchange of technological advances. Navy's effort will perforce grow rapidly and provide much of the technological base for the rest of the community with marine interests.

In exploratory development, or applied research, the task is to explore in depth the possibility of gaining military advantage from a new development in science, or of rapidly closing scientific gaps that have led to recognized problems. This part of the Navy's oceanographic program must be greatly strengthened and confined more closely to its goals. Because so much of the basic science was in a very rudimentary state, there has been a tendency for diversion of effort into fundamental research and a blurring of goals. This should now be sorted out so that a stronger program in both basic and applied research can emerge.

The basic research mission is so defined that working towards the solution of recognized and defined problems must not be the motive. The effectiveness of this effort must never be judged on the basis of how it performs the task of the applied research community, i.e., how it delivers quick solutions to today's problems. Nevertheless, any mission-oriented agency must use judgment in supporting basic research in those fields that have the potential of uncovering new knowledge that will give an advantage in fulfilling the mission. In the broadest sense this commends basic research in ocean science to the Navy. The Navy of the future will be shaped by the developing understanding of the environment in which it operates just as today's Navy has been shaped by basic oceanographic knowledge not available a few years or a few decades ago. It is critical to Naval development that ocean science progresses rapidly and on a very broad front.

Since the results of basic research end up quickly in the public realm, the Navy can, and does, benefit from research sponsored by other agencies. This is particularly true with research sponsored by the National Science Foundation, where the motivation is purely that of doing good science. Dependence upon research support from such other sources could, however, be dangerous. The Navy must continue to plan a dominant role in the support of basic ocean science in order that major parts of the national effort go into those phases of the science which are judged to have the greatest potential for Naval application, and no broad area is neglected because of changing fads in the research community.

Within the broad-fronted scientific program, emphasis will change from year to year as our realization of potential applicability grows. In the immediate future stress will be placed on the following areas:

- **Oceanic Dynamics**—Theoretical and observational studies of all scales and modes within the ocean. A carefully developed plan for this program has been developed by Woods Hole.
- **Air-Sea Interaction**—All aspects of the exchange of energy and material between ocean and atmosphere, including the resulting modification of conditions within each fluid. Scripps have evolved a plan for studying this problem on a large scale in the north Pacific.
- **Chemistry of the Ocean**—Organic and inorganic reactions as they take place in the ocean and their influence upon the environment.
- **Benthic Boundary Layer**—Studies of the conditions near the interface between ocean and underlying bottom both in the water and sediments.
- **Crustal and Subcrustal Structures**—Studies of the make-up of the solid earth beneath the sea as inferred from all available geophysical observations.
- **Bottom Layer Studies**—Studies having to do with the nature of the surficial sediments which make up the outer layer of the sub-ocean crust.
- **Biological Concentrations**—Especially the factors that lead to concentrations which influence the medium for acoustic transmission.

Research provides the base on which Navy missions of the future can be conducted. By stating hypothesized missions of the future, applied research can be structured to a great extent. The technological gaps can be ascertained. Within the limits of judicious planning and funding, some order of semblence can be made out of the process of supporting certain proposals and rejecting or re-directing others. The hypothesized missions used for structuring the Deep Sea Research Program in ocean technology are:

- Occupation for the purpose of exploitation of critical ocean floor sites on the continental shelf off the United States; sea mounts located near the United States; continental slopes off the United States; and the foregoing, but located elsewhere in the world. Capability is to include the use of both dry submersibles with and without exterior manipulators and ambient pressure (equalized) fixed or mobile SEALAB habitats.
- Salvage, recovery and oceanographic rescue operations in ocean waters to 20,000 feet.
- Installation and control and operation of weapon systems on the floor in continental shelf areas contiguous to the United States and extending depthwise as a function of time to the abysmal plain taking into special consideration sea mounts and ridges, such systems to be both manned and unmanned locally.
- Installation and operation and surveillance systems both on the ocean floor and at mid-depth taking advantage of the ocean floor topology and sound propagation channels, such systems to be both manned and unmanned locally.
- Provision of the necessary undersea technical support or technology to enable the national expansion and exploitation of the offshore resources by industry in conjunction with other Government agencies, such technology to include, but not be limited to, life support, vehicles, tools and communications.

It would be foolish to suggest that the Navy's basic research program could be strong in all phases of ocean science and technology, especially in the face of the rapid expansion of the field. Cautious reduction of support is and continue to be justified in areas where agencies with different missions show evidence of giving adequate support, or in areas where it is suspected that the chances of Naval application are remote. For example, the study of commercial fishes can well be left to the Bureau of Commerical Fisheries, although their distribution and abundance, as well as the distributed effort to catch them, is of military significance. The study of tsunamis, once sponsored entirely by ONR, has been entrusted to the Coast and Geodetic Survey as, under an assigned responsibility, the competence in that agency grew to accept it. In the study of coastal processes Navy's support has grown less rapidly because of an excellent program in the Army Corps of Engineers. Emphasis has been on coordinating these so that jointly the complementary studies serve the clear needs of both agencies.

Departure from the traditional methods in program management are being planned. For example, while major support for an effort may go to a single institution, provision for planning input and research participation by competent investigators from a number of institutions will be specified. Related parts of the program, vested in different groups, will be reviewed in context, and subjected to integrated funding and forward planning. It will probably be necessary to provide for parallel technological development for the instrumentation needed. The competence of American industry should be brought to bear upon this task.

DOD Value Engineering Conference Set for Fall

"The Role of Value Engineering in Support of Management Objectives," is the theme of a Defense Department in-house engineering conference to be held in the Washington, D.C., area Sept 12–14, 1967.

The Department of the Army will host the three-day conference. Representatives of the Army, Navy, Air Force, Marine Corps, and Defense Supply Agency will participate.

Purpose of the conference is to stimulate interest and increased effort to improve value engineering support of management objectives in the development, acquisition and support of defense systems, equipment and facilities.

Conference papers are being solicited on the following subjects:

- Practical methods for integrating value engineering into the life-cycle management of DOD systems, equipment, facilities, material and procedures in: program/project management, logistic support management, procurement management, and contract administration.
- Economic and functional gains achieved through injection of value engineering in program/project, logistic support, and procurement management, and contract administration.
- What is needed to provide a continuing current measure of the effectiveness of value engineering in the Defense Department.

The September meeting will mark the second DOD in-house conference on value engineering. The first was held in 1964.

Director of Laboratories Post Created by AFSC

A new agency, the Director of Laboratories (DOL), has been established within Headquarters, Air Force Systems Command (AFSC). The Commander, AFSC Research and Technology Division (RTD), Bolling AFB, Washington, D. C., has assumed the position of Director of Laboratories as an added responsibility.

The DOL and his staff, located at Andrews AFB, Md., will provide policy and technical direction to all phases of the programs and activities of the eight AFSC laboratories and monitor their operations to ensure a capability to respond promptly to the changing needs of the Air Force. These functions were previously provided by RTD and the AFSC Deputy Chief of Staff for Science and Technology.

With the establishment of a director of laboratories at the AFSC staff level, Air Force technological needs can be more readily identified and integrated into the overall planning, programming, and resources allocation of its laboratories.

SUMMER JOBS FOR YOUTH

[*Editor's note: The following is a statement issued by President Lyndon B. Johnson on the 1967 Youth Opportunity Campaign.*]

Woven into the national fabric are threads that weaken it—that make it sometimes ravel or tear. One of these threads is unemployment, particularly among youth.

Hundreds of thousands of young people walk the city streets and rural roads in search of meaningful employment. Hundreds of thousands more work part-time at tasks that bring them neither monetary nor emotional satisfaction.

In the last two years, we have been reaching out to help them with special summer employment programs. In 1965, the first Youth Opportunity Campaign created a million extra jobs for young men and women between the ages of 16 and 21.

We bettered that effort in 1966, when America's response to the need for "Summer Jobs for Youth" produced more than a million new opportunities.

Now, in June 1967, two million youngsters will join the job market who will have no help unless it is ours. Many of them could be on their way to becoming tomorrow's replacements for the left-behind Americans of today—unless a continued effort is made by private industry, by American labor, and by local, state and Federal governments to prevent that from happening.

To help these youngsters help themselves I am asking the Vice President, as Chairman of the new President's Council on Youth Opportunity, to appoint task forces of responsible leaders in 30 major cities of our nation, who will give their time and efforts to finding summer jobs and opportunities for those young people who most need help.

Theirs will be a great task, but they cannot do it alone. They must have the support and cooperation of all our people. I am asking for that cooperation now.

The Private Employer's Role.

The private employer supplied the great majority of the more than one million extra opportunities last year. Again his help is most essential of all.

Thousands of smaller businesses and offices throughout the land, who have already demonstrated a willingness to help in this endeavor, can do so again.

Governors and Mayors, labor unions, trade associations, civic and fraternal groups, churches and colleges have already demonstrated that they can find extra places for our young citizens. They can do so again.

It is important that we begin immediately.

Many employers will hire extra help directly this summer. Others will hire young persons through their local state employment service offices. In either case, I ask that word of what they have done, including the name of the trainee, be forwarded by mail to:

The Vice President
of the United States
Youth Opportunity
Campaign Unit
Washington, D.C. 20500

It will be appropriately acknowledged.

All boys and girls 16 through 21, who want to work this summer and who do not have assured jobs, should immediately contact the nearest State Employment Service office. If this is difficult, write to the Department of Labor, Youth Opportunity Campaign Unit, Washington, D.C. 20210.

The Federal Government's Role.

I am again directing the Goverment departments and agencies to lead this campaign. They should make every effort to find meaningful work or training opportunities this summer for young men and women.

These opportunities will be given so far as is practicable to those boys and girls, aged 16 to 21, who need them most because of their economic or educational disadvantages.

The young men and women, who want a chance to work and who are denied that chance, cost this country more than it can afford.

All America can help them help themselves. We do it for the sake of the American to come.

ABOUT PEOPLE

DEPARTMENT OF DEFENSE

Joseph J. Liebling has been selected for the post of Dir., Security Policy, Office of Asst. Secretary of Defense (Administration). He replaces **Walter T. Skallerup** who has returned to private law practice.

Robert W. Taylor has been appointed Dir. of Information Processing Techniques of the Advanced Research Projects Agency (ARPA). He succeeds **Dr. Ivan Sutherland** who left ARPA to join the faculty at Harvard University.

RAdm. Roy G. Anderson, USN, has been designated as Senior Navy Member, Military Studies and Liaison Div., Weapons Systems Evaluation Group, Office of Dir., Defense Research and Engineering.

Col. Fred L. Rennels Jr., USAF, has been assigned as Dir. of Contract Administration Services, Office of Asst. Secretary of Defense (Installations & Logistics).

Lt. Col. Travis M. Gafford, USA, has been assigned to the Business and Labor Div., Office of Asst. Secretary of Defense (Public Affairs).

DEPARTMENT OF THE ARMY

Col. Thomas W. Davis III, Project Manager for Combat Vehicles at Army Weapons Command, Rock Island, Ill., has retired from the Army.

The following new assignments have been made at Army Weapons Command, Rock Island, Ill.: **Lowell B. McClain,** Commodity Manager for the Commando V100 Armored Car; **Frank X. Connolly,** Commodity Manager for Automatic Data Systems within the Army in the Field (ADS AF); and **George Burdick,** Commodity Manager of the M102 Howitzer System.

Col. Stanton W. Josephson has been appointed as Dir., Materiel Testing Activities, Development and Proof Services, Aberdeen Proving Ground, Md.

Col. Franklin B. Moon will become District Engineer for the Army Corps of Engineers at Galveston, Tex. this summer, succeeding **Col. John E. Unverferth,** who is retiring.

Col. John C. Raaen Jr. succeeds **Col. Charles D. Y. Ostrom Jr.** in the three-hat position of Commander, Army Ballistic Research Laboratories, the Human Engineering Laboratories, and the Chemical and Coating Laboratory, at Aberdeen Proving Grounds, Md.

Col. John G. Redmon has been named Project Manager for the Hawk Missile System at the Army Missile Command, Redstone Arsenal, Ala.

Col. Albert M. Steinkrauss, Dir. of Procurement and Production, Army Aviation Materiel Command, St. Louis, Mo., since 1964, has retired from military service.

Lt. Col. Robert A. Filby has assumed duty as Chief, Flying Crane Project Manager Office, Army Aviation Materiel Command, St. Louis, Mo.

Lt. Col. William C. McHugh has been reassigned as Chief, Future Missile Systems Div., Army Missile Command, Redstone Arsenal, Ala.

Lt. Col. John E. Wagner has assumed duties as Commanding Officer, Army Cold Regions Research and Engineering Laboratory, Hanover, N.H., succeeding **Col. Dimitri A. Kellogg.**

DEPARTMENT OF THE NAVY

The following flag officer assignments have been made:

VAdm. John S. McCain Jr., (selected for promotion to the grade of admiral) Commander in Chief, U.S. Naval Forces, Europe; **VAdm. Lawson P. Ramage,** Commander, Military Sea Transportation Service, Washington, D.C.; **VAdm. Waldemar F. A. Wendt,** Dep. Chief of Naval Operations (Plans & Policy); **RAdm. Horace V. Bird,** Commander, Mine Forces, Pacific; **RAdm. Constantine A. Karaberis,** Commander, Fleet Air, San Diego, Calif.; **RAdm. Stephen Sherwood,** Commanding Officer, Naval Supply Depot, San Diego, Calif.; **RAdm. Harry N. Wallin,** Commander,

(Continued on Page 40)

Two New Deputies Appointed in OASD (Public Affairs)

Two veteran journalists, Daniel Z. Henkin and Richard Fryklund, have been appointed as deputies to the Assistant Secretary of Defense (Public Affairs) Phil G. Goulding.

In announcing the appointments, Secretary of Defense Robert S. McNamara stated, "Working with Assistant Secretary Phil G. Goulding, Deputy Assistant Secretaries Dan Henkin and Dick Fryklund will be key members of a team with unparalleled military news experience—a total of more than 45 years—in covering national defense."

Mr. Henkin has been serving as Director of Operations, Office of Assistant Secretary of Defense (Public Affairs), since October, 1965. A veteran military affairs reporter and former editor of the *Journal of the Armed Forces*, Mr. Henkin, 43, is a native of Washington, D.C., and a graduate of the University of California. He served during world War II as a Coast Guard combat correspondent.

Born in Denver, Colo., Mr. Fryklund, 45, is a graduate of the University of Minnesota, and served in Europe during World War II as an Air Force night fighter radar observer. Prior to his appointment as Deputy Assistant Secretary, Mr. Fryklund served as military writer for the *Washington Evening Star*, from which he has taken an indefinite leave of absence. He was European correspondent for the Star from 1956 to 1958, and has been the Star's military writer covering the Pentagon since 1959. In that period he has made five reporting trips to South Vietnam and the Far East.

Assistant Secretary of Defense (Public Affairs) Phil G. Goulding in a discussion with his two new deputies, Daniel Z. Henkin (left) and Richard Fryklund (right).

About People

(*Continued from Page 39*)

Naval Facilities Engineering Command, Atlantic Division, Norfolk, Va., **RAdm. William F. Petrovic**, Commander, Puget Sound Naval Shipyard, Bremerton, Wash; and **RAdm. Edward A. Ruckner**, Dep. Chief of Naval Operations (Development).

The following captain assignments have been made:

Capt. Edwin E. McMorries, Dir. of Procurement, Office of Asst. Secretary of the Navy (Installations & Logistics); **Capt. Thomas J. Christman**, Commanding Officer, Naval Ammunition Depot, Crane, Ind.; **Capt. Clyde E. Fulton**, Commanding Officer, Naval Supply Depot, Mechanicsburg, Pa.; **Capt. Grady H. Lowe**, Commander, Naval Ordnance Test Station, China Lake, Calif., relieving **Capt. John I. Hardy**, who is retiring; **Capt. William M. Nicholson**, Dir., Deep Submergence Systems Project Office, Chevy Chase, Md.; and **Capt. Thomas B. Owen** (rear admiral selectee) to succeed **RAdm. John K. Leydon** as Chief of Naval Research on June 30, 1967; and **Capt. Perry M. Boothe**, Dep. Commander, Naval Facilities Engineering Command, Southwest Div., San Deigo, Calif.

DEPARTMENT OF THE AIR FORCE

The President has nominated to the Senate the following named officers for appointment to the temporary general officer grades indicated:

To Major General.

Brig. Gen. Charles H. Roadman, Commander, Aerospace Medicine Div., AFSC; **Brig. Gen. Paul T. Cooper**, Commander, Space Systems Div., AFSC; **Brig. Gen. Joseph S. Bleymaier**, Commander, Air Force Western Test Range, AFSC; **Brig. Gen. Robert H. McCutcheon**, Dir. of Procurement & Production, AFLC; **Brig. Gen. Ernest A. Pinson**, Commander, Office of Aerospace Research; **Brig. Gen. Albert W. Schinz**, Commander, Air Force Tactical Air Warfare Center; **Brig. Gen. Richard D. Reinbold**, Dep. Dir. of Plans, Office of Dep. Chief of Staff (Plans & Operations), Hq. USAF; **Brig. Gen. William C. Garland**, Dep. Dir. of Information, Office of the Secretary of the Air Force; **Brig. Gen. Guy H. Goddard**, Dep. Dir. for Construction, Office of Dep. Chief of Staff (Programs & Resources), Hq. USAF.

To Brigadier General.

Col. David V. Miller, Vice Commander, Space Systems Div., AFSC; **Col. Allison C. Brooks**, Commander, Aerospace Rescue & Recovery Service, MAC; **Col. Raymond A. Gilbert**, Vice Commander, Research & Technology Div., AFSC; **Col. Robert J. Meyer**, Dir., Procurement Policy, Office of Dep. Chief of Staff (Systems & Logistics), Hq. USAF; **Col. Guy M. Townsend**, Systems Program Dir., C–5A Systems Program Office, Aeronautical Systems Div., AFSC; **Col. Robert A. Berman**, Dep. Dir., Maintenance Engineering, AFLC; **Col. Albert R. Shiely Jr.**, Vice Commander, Electronic Systems Div., AFSC; **Col. McLean W. Elliott**, Dep. for Range Operations, Air Force Eastern Test Range, AFSC.

Maj. Gen. James T. Stewart has been reassigned as Vice Dir., Manned Orbiting Laboratory (MOL). **Brig. Gen. Walter R. Hedrick Jr.**, replaces Gen. Stewart, as Dir. of Space in the Office of the Dep. Chief of Staff (Research and Development), Hq., USAF. **Brig. Gen. Joseph S. Bleymaier**, has been named Dep. Dir., MOL, with additional duty as Dep. Commander, Space Systems Div. (AFSC), for MOL.

Walter Sexauer has replaced **Joseph J. Liebling** as Asst. for Security and Trade Affairs, Office of Dep. Chief of Staff, (Systems & Logistics) and Office of the Dep. Chief of Staff, (Research & Development) Hq., USAF.

New assignments in the Air Force Systems Command are: **Maj. Gen. Vincent G. Huston**, Dep. Chief of Staff (Operations), Hq., AFSC; **Maj. Gen. David M. Jones**, Commander, Air Force Eastern Test Range, Patrick AFB, Fla.; **Col. Harwell L. Boyd Jr.**, Dep. System Program Dir., 416/418, Electronics Systems Div.; **Col. John P. Clowry**, Chief, SACCS Projects Office, Electronics Systems Div.; **Col. James R. Finton**, Dir., Engineering Standards and Technical Information, Systems Engineering Group; **Col. Paul Baker Jr.**, Chief, Systems Engineering Div., MOL Program, Hq., AFSC; **Col. John C. Beals**, Dir., Civil Engineering, Arnold Engineering Development Center, Tenn.; **Col. Winston H. Clisham**, Dep. for Civil Engineering, Aeronautical Systems Div.; **Col. Roy R. Croy Jr.**, Asst. Dir., Test, Arnold Engineering Development Center, Tenn.; **Col. Joseph E. Duval**, Chief, Engineering and Evaluation Div., Armament Development Laboratory (RTD), Eglin AFB, Fla.; **Col. Charles E. Jerman**, Dep. for Civil Engineering, Air Force Flight Test Center, Edwards AFB, Calif.; **Col. David R. Jones**, Dir., Air Force Weapons Laboratory, Kirtland AFB, N.M.; **Col. Donald J. Keeffe**, Chief, Procurement Div., Ballistic Systems Div.; **Col. Harrison E. Kee Jr.**, Chief, Command and Surveillance Div., Research and Technology Div.; **Col. Ralph W. Kiser**, Chief, Communications, Electronics Systems Div., Hq.. AFSC; **Col. Robert G. Newbern**, Dir., Range Safety Div., Air Force Eastern Test Range, Patrick AFB, Fla.; **Col. Victor C. Wegenhoft**, Chief, Plans Div., National Range Div., Patrick AFB, Fla., **Col. Walter Schlie**, Dir., Reconnaissance Survivability and Electronic Warfare, Hq., AFSC; **Col. Warren T. Whitmire**, Dir., AFWET Div., Air Proving Ground Center, Elgin AFB, Fla.; **Col. William C. Marett**, Dir. of Bioastronautics, Hq., AFSC; **Lt. Col. John J. Whiteside**, Dir. of Information, Aeronautical Systems Div.

Col. Duane A. Kuhlmann, has been named Chief F–102/106 System Support Manager Div., Directorate of Maintenance Management, San Antonio Air Materiel Area, Kelly AFB, Fla.

Col. Henry G. Hamby Jr., has assumed duties as Dep. Commander, Mobile Air Materiel Area, Brookley AFB, Ala. He relieved **Col. John McCorkle** who has retired.

Col. John J. Bennett has been assigned as Executive to the Dep. Under Secretary of the Air Force (Manpower).

Col. William H. Lake, has been assigned as Secretary, Scientific Advisory Board, Hq., USAF.

President Johnson Sets National Transportation Day

President Lyndon B. Johnson, in response to a joint resolution of the U. S. Congress, has designated Friday, May 19, 1967, as National Defense Transportation Day, and the week beginning May 14, 1967, as National Transportation Week.

In his proclamation the President urges all American citizens to participate with the transportation industry, the Armed Services and other Government agencies in the observance of these occasions through appropriate ceremonies. The observance of National Defense Transportation Day and National Transportation Week will give the citizens of each community the opportunity to recognize and appreciate fully the vital role our great and modern transportation system plays in their lives and in the defense of the nation.

Local and Short Haul Carriers Forum Set

The Defense Department and General Services Administration will participate in a special forum on "How To Do Business With The U. S. Government," for companies exhibiting at the Local and Short Haul Carriers 1967 National Trucking Exposition to be held at the Edgewater Beach Hotel, Chicago, Ill., May 15–17, 1967. The forum is scheduled for Tuesday, May 16, at 10:30 a.m.

Presentations will be made by each agency to be followed by a question and answer session during which exhibitor representatives may inquire into the various aspects of doing business with the Government. The speakers at the forum will be George H. Wilson, Small Business Advisor, U. S. Army Tank-Automotive Center, Warren, Michigan; and Joel L. Leckness, Regional Director of Business Affairs, General Services Administration Region Five, Chicago, Ill.

There will be no charge for attendance at the forum. For additional information contact: Local and Short Haul Carriers National Conference, 1616 P St. NW, Washington, D. C. 20036.

Constructive Change Orders

[*Editor's Note: The following article, which contains information of interest to industry, is reprinted from the* Headquarters Naval Material Command Procurement Newsletter.]

The wording of the Changes clause in Government contracts, and the requirement in Armed Services Procurement Regulation (ASPR) 16–815.1 for the use of Change Order Form DD 1319, would lead one to believe that a formal, written change order must be issued by the contracting officer to entitle the contractor to an equitable adjustment under the Changes clause. However, that is not the case; the contracting officer and other personnel may, in informal communications or by their course of conduct, generate price increases and time extensions without intending to or even being aware that they are doing so.

The Changes clause expressly provides for equitable adjustments only where the changes are made "by written order" of the contracting officer (or his authorized representative). But the courts and appeals boards hold that a "constructive" change order results, the same as if the contracting officer had issued a written order on the prescribed DD Form, when the contractor is required by the words or conduct of authorized Government representatives to perform different or additional work under the contract. Words effecting the change may be written or oral; and directive words, such as "order," "direct," or "require," need not be used if the contractor's work is, in fact, changed. A change may result from a failure to act as well as from a positive course of conduct. But a "constructive" change does not occur unless the contracting officer, or his authorized representative, has authority to take the action that generates the increased costs or time required for performance.

Examples of circumstances under which constructive change orders may arise are:

- When an inspector or contracting officer unjustifiably rejects work, thereby requiring the contractor to perform rework or additional work not required by the contract.
- Where inspectors or other authorized personnel require excessive tests or a higher standard of performance than called for by the specification.
- Where the contractor's costs are increased by a change in the time, place, or manner of inspection, or in quality control requirements.
- Where the contract does not specify how the work is to be done and the Government's representative insists that it be done in a certain way, although the work could be performed satisfactorily by a less expensive method.
- Where the contractor incurs additional costs because he is forced by action of the cognizant Government official to alter the sequence in which the work is performed.
- Where, based on a misinterpretation of the contract, the contracting officer directs performance not legally required by the contract.
- Where the contractor is entitled to a time extension because of an excusable delay, and the contracting officer acts in such a way as to require the contractor to adhere to the original contract performance schedule despite notice of the contractor's claim to an extension of time. This is called "acceleration" of performance. It may also occur where the contracting officer recognizes an excusable delay, but for a shorter period than is justified, so that the time extension granted is insufficient and the contractor is forced to speed up the work.
- Similarly, where the Government's specifications contain inconsistencies or other errors, the correction of which is, in fact, required for performance of the contract work contemplated by the parties. In such a case the contractor has been entitled to an equitable adjustment under the Changes clause to compensate him for extra work caused by the defects in the specifications, even though the increase in cost was not caused by an express change order.

The proper method of effecting required changes is by written change orders which are expressly provided for in the contract and under which both parties are aware of their rights and obligations in regard to the change. Constructive changes should be avoided; they often impose improper demands on the contractor, increase unnecessarily the Government's financial obligations, and result in unintended time extensions. They can more readily be avoided if personnel administering contracts have an understanding of what conduct might be considered to constitute constructive changes. Frequently, such changes are due to the contract administrator's lack of understanding of the Government's contractual rights. The advice of Counsel is especially desirable in these cases, and will be helpful generally in situations where constructive change orders may arise.

Navy Establishes Buying Command in Oakland, Calif.

An Area Buying Command has been established at the Naval Supply Center, Oakland, Calif., to exercise technical direction, on a trial basis, over field purchasing offices within the 12th Naval District (Northern California and Nevada).

The Navy Field Purchase System, which includes the purchase elements of more than 200 naval activities world-wide, has been centrally managed from Headquarters, Naval Supply Systems Command, in Washington, D.C., in the past. However, Supply Systems Command is now considering the feasability of transferring a number of functions to locations closer to field purchasing activities and their customers.

The Area Buying Command (ABC) was established at Oakland as a test of the concept of partial decentralization. A major aim is to determine how well ABC can effect the economies of consolidated buying by standardizing procedures and eliminating duplications of purchases.

Rear Admiral Edward F. Metzger, Commanding Officer, Oakland Naval Supply Center, is ABC's commander. Vice commander is Commander Davis L. Webb who directs Oakland Naval Supply Center's Purchase Department. The ABC office is in Building 311–3.

ABC's first major operational task will be to conduct an inventory of area purchase requirements and resources. From the results of this inventory, the first to be undertaken by the Navy, ABC will construct a purchase management master plan for the 12th Naval District to match area purchase resources with requirements.

DEFENSE PROCUREMENT

Contracts of $1,000,000 and over awarded during the month of March 1967:

DEFENSE SUPPLY AGENCY

1—**Genesco, Inc.**, Florence, Ala. $2,034,807. 779,160 pairs of men's light-weight winter drawers. Defense Personnel Support Center, Philadelphia, Pa.

—The Defense Fuel Supply Center, Alexandria, Va., has issued the following contracts for 115/145 aviation gasoline:

Cities Service Oil Co., New York, N.Y. $3,122,645. 19,839,000 gallons.

Phillips Petroleum Co., Bartlesville, Okla. $1,939,140. 11,340,000 gallons.

Mobil Oil Corp., New York, N.Y. $1,796,928. 11,760,000 gallons.

Shell Oil Co., New York, N.Y. $1,400,280. 8,400,000 gallons.

6—**Fruehaut Corp.**, Fullerton, Calif. $5,339,452. 12,426 reusable metal shipping boxes. Defense General Supply Center, Richmond, Va.

—**Fab-Weld Corp.**, Simpson, Pa. $2,913,897. 8,284 reuseable metal shipping boxes. Defense General Supply Center, Richmond, Va.

7—**Salada Foods, Inc.**, Woburn, Mass. $1,142,251. 1,171,512 pounds of black tea in individual bags. Defense Personnel Support Center, Philadelphia, Pa.

—**Lester D. Lawson & Co.**, Long Beach, Calif. $4,816,099. 148,740 cases of ration supplement—sundries pack. Defense Personnel Support Center, Philadelphia, Pa.

8—**Texaco Co., Inc.**, New York, N.Y. $1,960,800. 1,200,000 barrels of No. 6 fuel oil. Defense Fuel Supply Center, Alexandria, Va.

—**Standard Oil Company of California**, San Francisco, Calif. $1,636,100. 930,000 barrels of No. 6 fuel oil. Defense Fuel Supply Center, Alexandria, Va.

9—**International Harvester Co.**, Melrose Park, Ill. $1,264,982. 50 full-tracked diesel engine-driven tractors with concurrent spare parts. Melrose Park. Defense Construction Supply Center, Columbus, Ohio.

10—**General Fire Extinguisher Corp.**, Northbrook, Ill $1,032,323. 71,000 fire extinguishers. Defense Construction Supply Center, Alexandria, Va.

—The Defense Fuel Supply Center. Alexandria, Va., has awarded the following contracts for diesel and fuel oil:

Mobil Oil Corp., New York, N.Y. $2,767,419 103,250 barrels diesel fuel. 1,241,400 barrels #6 fuel oil.

Gulf Oil Corp., Houston, Tex. $1,588,737. 12,000 gallons gasoline, 77,000 barrels diesel fuel, 166,700 barrels #6 fuel oil.

Humble Oil & Refining Co., Houston, Tex. $1,09.,581. 25,750 barrels diesel fuel. 411,300 barrels #6 fuel oil.

Metropolitan Petroleum Co., New York, N.Y. $1,078,300. 526,000 barrels #6 fuel oil.

13—**Dow Chemical Co.**, Midland, Mich. $2,274,000. Chemicals. Defense General Supply Center, Richmond, Va.

14—**Sparling Mills, Inc.**, Greenville, R.I. $3,350,000. 20,000,000 polypropylene sandbags. Defense General Supply Center, Richmond, Va.

15—**Royal Lubricants Co.**, Hanover, N.J. $2,015,886. 565,306 gallons of aircraft turbine engine lubricating oil. Defense Fuel Supply Center, Alexandria, Va.

16—The Defense Personnel Support Center, Philadelphia, Pa., has awarded the following contracts for tropical combat boots:

Safety First Shoe Co., Nashville, Tenn. $4,763,346. 444,342 pairs.

Endicott Johnson Corp., Endicott, N.Y. $3,130,460. 283,704 pairs.

Wellco Research Industries, Waynesville, N.C. $1,715,613. 160,638 pairs.

17—**Morris Bros. Inc.**, New York, N.Y. $2,797,868. 1,600,000 cotton bed sheets. Defense Personnel Support Center, Philadelphia, Pa.

21—**American Oil & Supply Co.**, Newark, N.J. $2,576,584. 565,306 gallons of aircraft turbine engine lubricating oil. Defense Fuel Supply Center, Alexandria, Va.

27—**California Steel & Tube**, Los Angeles, Calif. $1,203,150. 37,500 bunk beds. Defense General Supply Center, Richmond, Va.

—**Dixie Bedding Co.**, Miami, Fla. $3,981,788. 156,000 bunk beds. Defense General Supply Center, Richmond, Va.

28—**Wythe Tool & Machine, Inc.**, Brooklyn, N.Y. $1,256,979. 327,816 adjustable telescopic tent poles. Defense Personnel Support Center, Philadelphia, Pa.

—**United Aircraft**, East Hartford, Conn. $1,508,742. 2,021 sets of bearings and 13,870 individual bearings. Defense Industrial Supply Center, Philadelphia, Pa.

29—**LaCrosse Garment Mfg. Co.**, LaCrosse, Wis. $2,914,901. 850,000 tent shelter halves. Defense Personnel Support Center, Philadelphia, Pa.

—**Dow Chemical Co.**, Midland, Mich. $2,274,000. 300,000 gallons of a chemical. Defense General Supply Center, Richmond, Va.

CONTRACT LEGEND

Contract information is listed in the following sequence: Date—Company—Value—Material or Work to be Performed—Location Work Performed—Contracting Agency.

ARMY

1—**G.G. Greene Enterprises**, Warren, Pa. $1,032,897. 5.56mm 10-round clips and magazine fillers. Warren. Frankford Arsenal, Philadelphia, Pa.

—**Boeing Co.**, Morton, Pa. $7,400,000. CH–47A helicopter configuration 1A and III product improvement program. Morton. Army Aviation Materiel Command, St. Louis, Mo.

—**Zenith Radio Corp.**, Chicago, Ill. $1,012,700. SM429 fuzes for the 2.75-inch rocket. Chicago. Harry Diamond Laboratories, Washington, D.C.

—**Atlantic Research Corp.**, Alexandria, Va. $3,000,000. XM22E2 mines. East Hanover, Mass. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Viz Mfg. Co.**, Philadelphia, Pa. $1,616,668. AN/AMT–4D and AN/AMT–12 radiosonde sets. Philadelphia. Army Electronics Command. Philadelphia, Pa.

2—**Stevens Mfg. Co.**, Ebensburg, Pa. $1,287,127. 7½-ton semi-trailers. Ebensburg. Army Tank Automotive Command, Warren, Mich.

—**Johnson Corp.**, Bellevue, Ohio. $1,029,701. 3½-ton trailers. Bellevue. Army Tank Automotive Command, Warren, Mich.

—**H. O. Boehme, Inc.**, Westbury, N.Y. $2,186,531. Teletypewriter sets and related equipment. Westbury. Army Electronics Command, Philadelphia, Pa.

—**ITT Gilfillan, Inc.**, Los Angeles, Calif. $2,382,500. Omni-directional mortar locating radar systems. Los Angeles. Army Electronics Command, Fort Monmouth, N.J.

—**Allis Chalmers Mfg. Co.**, York, Pa. $4,748,360. Work on the Webbers Fall Lock and Dam, Oklahoma Project. Gore, Okla. and York, Pa. Engineer Dist., Tulsa, Okla.

3—**General Steel Tank Co.**, Reidsville, N.C. $2,516,898. 60,000 gallon capacity fuel system supply points. Reidsville. Army Mobility Equipment Command, St. Louis, Mo.

—**KDI Corp.**, Cincinnati, Ohio. $1,849,220. Metal parts for 2.75-inch rocket fuzes. Cincinnati. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Institute for Defense Analyses**, Arlington, Va. $3,013,589. An 8-month extension for additional research and development for the Weapons System Evaluation Group of the Joint Chief of Staff. $4,000,000. An 8-month extension for additional research in technical fields for DDR&E and ARPA. Arlington. Defense Supply Service, Washington, D.C.

6—**Chrysler Motors**, Detroit, Mich. $1,034,677 and $3,428,772. Trucks. Warren, Mich. Army Tank Automotive Command, Warren, Mich.

—**Atlas Corp., and H. C. Smith Construction Co.**, Oakland, Calif. $1,352,378. 31 months of additional logistics support at Kawajalein Test Site. Nike–X Project Office, Redstone Arsenal, Huntsville, Ala.

7—**National Presto Industries**, Eau Claire, Wis. $3,966,802. Metal parts for 8-inch M106 projectiles, and for lifting plugs. Eau Claire. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Allis Chalmers Mfg. Co.**, York, Pa. $1,515,633. Work on the De Gray Dam and Reservoir, Arkansas Project. West Allis, Wis. and Arkadelphia, Ark. Engineer Dist., Vicksburg, Miss.

—**United Aircraft**, Stratford, Conn. $1,260,000. Component armor kits for CH–54A helicopters (Flying Crane). Stratford. Army Aviation Materiel Command, St. Louis, Mo.

—**Varo, Inc.**, Garland, Tex. $1,657,475. Classified electronic equipment. Garland. Army Electronics Command, Fort Monmouth, N.J.

—**Merando, Inc.**, Washington, D.C. $3,294,394. Construction of two 8-story wings as additions to the Sheridan Building at the Soldier's Home, Washington, D.C. Engineer Dist., Baltimore, Md.

8—**Philco-Ford Corp.**, Newport Beach, Calif. $4,559,200. Continuation of research and development on the Chaparral air defense missile system. Anaheim, Calif. Army Missile Command, Redstone Arsenal, Huntsville, Ala.

—**Webber Constructors**, Miami, Fla. $1,883,400. Work on the Four River Basins, Florida Project. Marion County, Fla. Engineer Dist., Jacksonville, Fla.

9—**University of Wisconsin**, Madison, Wis. $1,300,000. Continuation of operation of the Mathematics Research Center. Madison. Army Research Office-Durham, Durham, N.C.

—**FMC Corp.**, South Charleston, W. Va. $1,099,300. Road wheels for M113 vehicles. Los Angeles, Calif. Army Tank Automotive Command, Warren, Mich.

—**Hughes Tool Co.**, Culver City, Calif. $1,643,941. XM27E1 aircraft armament sub-systems for OH–6A helicopters. Culver City. Army Weapons Command, Rock Island, Ill.

10—The Army Electronics Command, Fort Monmouth, N.J., has awarded the following contracts for contract definition on the Tactical Fire Direction Systems:

I.B.M. Corp., Gaithersburg, Md. $1,065,969; **Litton Systems, Inc.**, Van Nuys, Calif. $1,416,374. **Burroughs Corp.**, Paoli, Pa. $1,216,841.

—**Morrison Knudsen Co., Perini Corp., Brown & Root, Inc., McLaughlin, Inc. and F & S Contracting Co.**, Seattle, Wash. $82,916,474. Work on the Libby Dam, Kootenei River Project. Libby, Mont. Engineer Dist., Seattle, Wash.

—**Federal Cartridge Corp.**, Minneapolis, Minn. $29,037,902. Ordnance components and Operations and Maintenance Activities. New Brighton, Minn. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**A. O. Smith Corp.**, Chicago, Ill. $4,905,516. Metal parts for M117A1 750-pound bombs. Waco, Tex. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Lockheed Aircraft**, Plainfield, N.J. $1,225,445. Range-only radar systems for the XM163 Weapons System. Plainfield. Frankford Arsenal, Philadelphia, Pa.

—**Chrysler Motors**, Detroit, Mich. $1,188,813. Various telephone utility maintenance trucks. Warren, Mich., Cardington, Ohio and Durant, Okla. Army Tank Automotive Command, Warren, Mich.

—**Raytheon Mfg. Co.**, Lexington, Mass.

$3,000,000. Continued work on the improved Hawk. Bedford, Mass. Army Missile Command, Redstone Arsenal, Huntsville, Ala.

13—**J H W, Inc.**, Dover, Del. $1,304,170. Construction of an intercepting sewer from Naha City to the Machinato Service Area, Okinawa. Engineer Dist., Okinawa.

—**Hercules, Inc.**, Wilmington, Del. $8,876,532. Manufacturing miscellaneous propellants; loading, assembling and packing rocket motors; and operations and maintenance activities. Radford, Va. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**General Electric**, Kansas City, Mo. $1,267,098. A generator for the Stockton Reservoir, Missouri Project. Schenectady, N.Y. and Stockton, Mo. Engineer Dist., Kansas City, Mo.

—**Elmer J. Freethy Co.**, El Cerrito, Calif. $1,634,961. Work on the Walnut Creek Channel, California Project. Walnut Creek, Calif. Engineer Dist., Sacramento, Calif.

—**Western Electric**, New York, N.Y. $100,000,000. Continuing Nike–X research and development. Burlington, N.C., Orlando, Fla., Wayland, Mass., St. Paul, Minn., Syracuse, N.Y., Santa Monica, Calif., and Whippany, N.J. Nike–X Project Office, Redstone Arsenal, Huntsville, Ala.

14—**Eltra Corp.**, Toledo, Ohio. $1,867,799. Batteries for 2½ and 5-ton trucks. Oakland, Calif. East Point, Ga., Redding, Pa., and Oklahoma City, Okla. Army Tank Automotive Center, Warren, Mich.

—**White Motors**, Lansing, Mich. $10,433,090. 2½-ton trucks. Lansing. Project Manager, General Purpose Vehicles, Michigan Army Plant, Warren, Mich.

—**General Motors**, Cleveland, Ohio. $4,000,000. Body and band assembly for 81mm projectiles. Cleveland. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Westinghouse Air Brake Co.**, Peoria, Ill. $2,722,132. Earth moving scrapers. Toccoa, Ga. Army Mobility Equipment Command, St. Louis, Mo.

—**Cessna Aircraft Co.**, Wichita, Kan. $3,352,500. Bombs, including shipping and storage containers. Wichita. Ammunition procurement & Supply Agency, Joliet, Ill.

15—**Piracci Construction Co.**, Baltimore, Md. $2,267,005. Construction of a three-story building for a major air command headquarters at Langley AFB, Va. Engineer Dist., Norfolk, Va.

—**Hercules, Inc.**, Wilmington, Del. $6,384,605. 2.75-inch rocket components. Lawrence, Kan. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Grumman Aircraft Engineering Corp.**, Bethpage. N.Y. $2,914,900. Modification of four Mohawk aircraft. Bethpage. Army Aviation Materiel Command, St. Louis, Mo.

—**Continental Motors**, Muskegon, Mich. $2,259,900. Power packages for M48A4 tanks. Muskegon. Army Tank Automotive Command, Warren, Mich.

—**General Motors**, Indianapolis, Ind. $3,596,400. T–63–A–5A aircraft engines for LOH aircraft. Indianapolis. Army Aviation Materiel Command, St. Louis, Mo.

16—**Airtronics International Corp.**, Fort Lauderdale, Fla. $1.560,777. Component parts of the fire control assembly for the M60 tank. Fort Lauderdale. Procurement Detachment, Chicago, Ill.

—**Borg Warner Corp.**, Bellwood, Ill. $1,603,291. 30-cal, 8-round cartridge clips. Bellwood. Frankford Arsenal, Philadelphia, Pa.

17—**American Air Filter Co.**, St. Louis, Mo. $1,179,789. Engineering development of a pressurized POD system. St. Louis. Edgewood Arsenal, Md.

—**Bell Helicopter Co.**, Hurst. Tex. $2,000,000. Long lead time effort for additional AH–1G helicopters (Cobra). Hurst. Army Aviation Materiel Command, St. Louis, Mo.

20—**International Harvester Co.**, Melrose Park, Ill. $1,605,107. Diesel-engine driven tractors. Chicago, Ill. Army Mobility Equipment Command, St. Louis, Mo.

—**Continental Motors**, Muskegon, Mich. $3,235,490. Multi-fuel engines for 5-ton trucks. Muskegon. Army Tank Automotive Command, Warren, Mich.

—**Kaiser Jeep Corp.**, Toledo, Ohio. $12,640,044. 5-ton trucks with Government furnished, multi-fuel engines. South Bend, Ind. Project Manager, General Purpose Vehicles, Warren, Mich.

—**Remington Arms Co.**, Bridgeport, Conn. $5,920,211. Loading, assembling and packing of miscellaneous small arms ammunition and components, and for operation and maintenance activities. Independence, Mo. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Farmers Tool & Supply Co.**, Denver, Colo. $1,217,657. Fin blades for 2.75-inch rocket motors. Denver. Picatinny Arsenal, Dover, N.J.

—**Dirilyte Company of America**, Kokomo, Ind. $1,027,500. Fin blades for 2.75-inch rocket motors. Kokomo. Picatinny Arsenal, Dover, N.J.

21—**Gibbs Mfg. & Research Corp.**, Janesville, Wis. $1,192,800. Metal parts for rocket fuzes. Janesville. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Bell & Howell Co.**, Chicago, Ill. $2,126,950. Grenade fuzes. Chicago. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**International Harvester Co.**, Chicago, Ill. $5,852,466. School buses of various passenger capacity and gross vehicle weights. Fort Wayne, Ind.; Springfield, Ohio and Lima, Ohio. Army Tank Automotive Command, Warren, Mich.

—**Boeing Co.**, Morton., Pa. $29,807,500. CH–47A (Chinook) helicopters and related data. Morton. Army Aviation Materiel Command, St. Louis, Mo.

22—**Gibbs Mfg. & Research Corp.**, Janesville, Wis. $1,129,556. Fuze adapters for 81mm mortar cartridges. Janesville, Wis., and Chicago, Ill. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Davey Compressor Co.**, Kent, Ohio. $2,709,569. Rotary diesel engine compressors. Kent. Army Mobility Equipment Command, St. Louis, Mo.

—**General Electric**, Burlington, Vt. $3,467,302. 20mm automatic guns, with gun pods. Burlington. Army Weapons Command, Rock Island, Ill.

—**TEMCO, Inc.**, Nashville, Tenn. $2,520,386. Metal parts for 105mm illuminating projectiles. Nashville. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Norris Industries, Inc.**, Vernon, Calif. $2,266,932. Metal parts for mine canisters. Brockton, Mass. and Vernon. Ammunition Procurement & Supply Agency, Joliet, Ill.

23—**International Harvester Co.**, Melrose Park, Ill. $1,852,120. Diesel engine driven tractors. Chicago, Ill. Army Mobility Equipment Command, St. Louis, Mo.

24—**Bouligny Co.**, Charlotte, N.C. $1,154,342. Mounts for 106mm rifles. Charlotte. Watervliet Arsenal, N.Y.

—**Thermo King Corp.**, Minneapolis, Minn. $1,081,590. Trailer-mounted airconditioners. Minneapolis. Army Mobility Equipment Command, St. Louis, Mo.

—**Pacific Ventures, Inc.**, Seattle, Wash. $1,169,000. Construction of a warehouse at Elmendorf AFB, Alaska. Engineer Dist., Anchorage, Alaska.

—**Bell Helicopter Co.**, Fort Worth, Tex. $1,900,000. Work on a composite aircraft program. Fort Worth. Army Aviation Materiel Laboratories, Fort Eustis, Va.

—**Lockheed California Co.**, Burbank, Calif. $1,900,000. Work on a composite aircraft program. Burbank. Army Aviation Materiel Laboratories, Fort Eustis, Va.

27—**American Machine & Foundry Co.**, Brooklyn, N.Y. $2,382,574. Metal parts for 750-lb bombs. Garden City, N.Y. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Morrison-Knudsen Co.**, New York, N.Y. $1,645,000. Rehabilitation and construction of loading, assembling and packing facilities at the Iowa Army Ammunition plant, Burlington, Iowa. Engineer Dist., Omaha, Neb.

28—**Continental Motors**, Muskegon, Mich. $3,550,000. Unit exchange of a minimum quantity of new or remanufactured 0–470 engines. Mobile, Ala. Army Aviation Materiel Command, St. Louis, Mo.

—**Western Electric**, New York, N.Y. $3,200,000. FY 1967 Nike Hercules and Improved Nike Hercules engineering services. Burlington, N.C.; Santa Monica, Calif., and Syracuse, N.Y. Army Missile Command. Redstone Arsenal, Huntsville, Ala.

—**Chamberlain Mfg. Corp.**, Waterloo, Iowa. $2,380,019. 106mm projectiles. Waterloo. Procurement Detachment, Chicago, Ill.

—**Dyson & Co.**, Pensacola, Fla. $1,693,125. Alterations and air conditioning of 41 separate one-story frame airmen dormitories. Tyndall AFB, Fla. Office of the Chief of Engineers, Washington, D.C.

29—**Davey Compressor Co.**, Kent, Ohio. $2,244,623. Self contained shop sets for maintenance of construction and automotive type equipment. Kent. Army Mobility Equipment Command, St. Louis, Mo.

—**Westinghouse Air Brake Co.**, Peoria, Ill. $2,068,354. Road graders. Indianapolis, Ind. Army Mobility Equipment Command, St. Louis, Mo.

—**Studebaker Corp.**, Minneapolis, Minn. $1,258,632. Generator sets. Minneapolis, Minn. Army Mobility Equipment Command, St. Louis, Mo.

—**Allis-Chalmers Mfg. Co.**, Milwaukee, Wis. $10,911,625. Loaders. Deerfield, Ill. Army Mobility Equipment Command, St. Louis, Mo.

—**Koehring Co.**, Newton, Iowa. $2,650,349. Ditching machines. Newton. Army Mobility Equipment Command, St. Louis, Mo.

—**Caterpillar Tractor Co.**, Peoria, Ill. $7,941,917. Tractors. Peoria. Army Mobility Equipment Command, St. Louis, Mo.

—**FMC Corp.**, South Charleston, W. Va. $2,219,140. Differential assemblies for M113 vehicles. San Jose, Calif. Army Tank Automotive Command, Warren, Mich.

—**General Motors**, Cleveland, Ohio. $6,500,000. Establishment of facilities to produce metal parts for 81mm shells. Cleveland. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**AVCO Corp.**, Stratford, Conn. $1,546,776. T–55–L–7C aircraft engines for CH–47 Chinook aircraft. Stratford. Army Aviation Materiel Command, St. Louis, Mo.

—**Raytheon Co.**, Lexington, Mass. $1,791,979. Panel meter test sets for the Hawk missile system. Lexington, Mass., and Mountain View, Calif. Army Missile Command, Redstone Arsenal, Huntsville, Ala.

—**URS Corp.**, Burlingame, Calif. $1,154,741. Development of an Automatic Data Processing System dealing with software for the Seventh Army. Germany. Engineer Research & Development Labs, Fort Belvoir, Va.

—**Defco Construction Co.**, Tucson, Ariz. $1,136,000. Construction of two three-story, 200-man dormitories at Davis-Monthon AFB, Ariz.; and one three-story, 200-man dormitory at Williams AFB, Ariz. Engineer Dist., Los Angeles, Calif.

30—**McKenzie Construction Co.**, San Antonio, Tex. $1,069,126. Work on the San Antonio Channel Improvement, Texas Project. Engineer Dist., Fort Worth, Tex.

—**R. P. Burris Co.**, La Canada, Calif. $1,021,588. Work on the Blanchard Canyon and Channel and Debris Basin, Blue Gum Canyon Project. Tujunga, Calif. Engineer Dist., Los Angeles, Calif.

—**Electro-Mechanical Corp.**, Sayre, Pa. $1,032,990. Electrical equipment shelters. Sayre. Army Electronics Command, Philadelphia, Pa.

—**Norris Industries**, Los Angeles, Calif. $1,816,785. 105mm cartridge cases. Vernon, Calif. Southwest Procurement Dist., Pasadena, Calif.

—**Cadillac Gage Co.**, Warren, Mich. $1,394,793. Armored cars. Warren, Mich. Army Tank Automotive Command, Warren, Mich.

—**General Motors**. Indianapolis, Ind. $1,077,002. Steering gear assemblies and two lots of spare parts for XM733 amphibious assault vehicles and XM759 marginal terrain vehicles. Cleveland, Ohio. Army Tank Automotive Command, Warren, Mich.

31—**Chrysler Corp.**, Huntsville, Ala. $1,285,426. Installation kits and shelters for field communications. Huntsville. Army Electronics Command, Philadelphia, Pa.

—**Philco-Ford Corp.**, Newport Beach, Calif. $1,935,176. Test equipment for the Chaparral Missile System. Anaheim, Calif. Army Missile Command, Redstone Arsenal, Huntsville, Ala.

—**Litton Systems, Inc.**, Van Nuys, Calif. $1,242,762. Conduct of an experiment to collect data on high speed aircraft against Army ground weapons. Fort Ord, Calif. Northwest Procurement Detachment, Oakland, Calif.

—**General Electric**, Burlington, Vt. $1,427,495. 7.62mm aircraft machine guns with ancillary equipment and repair parts to support Air Force and Army guns. Burlington. Army Weapons Command, Redstone Arsenal, Huntsville, Ala.

—**Hol-Gar Mfg. Corp.**, Trimos, Pa. $2,793,546. 60-cycle diesel engine driven generator sets. Trimos. Army Mobility Equipment Command, St. Louis, Mo.

—**Outboard Marine Corp.**, Waukegan, Ill. $1,456,428. Outboard motors for assault boats and rafts. Waukegan. Army Mobility Equipment Command, St. Louis, Mo.

—**Dinger Contracting Co.**, Staten Island, N.Y. $1,275,883. Construction of ammunition maintenance facilities at Letterkenny Army Depot, Chambersburg, Pa. Engineer Dist., Baltimore, Md.

—**Packard Bell Electronics Corp.,** Newbury Park, Calif. $3,267,201. A special electronic test set used for air fields and aircraft carrier decks. Newbury Park. Southwest Procurement Detachment, Pasadena, Calif.

—**S. S. Mullen, Inc.,** Seattle, Wash. $3,949,631. Work on the Little Goose Lock and Dam on Snake River, Washington Project. Whitman County Wash. Engineer Dist., Walla Walla, Wash.

—**Raytheon Co.,** Lexington, Mass. $1,734,936. Magnatron tubes for Nike Hercules missiles. Waltham, Mass. Army Missile Command, Redstone Arsenal, Huntsville, Ala.

—**Amron Corp.,** Waukesha, Wis. $1,569,573. Metal parts for bomblets. Waukesha. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Eureka Williams Co.,** Bloomington, Ill. $2,592,817. Bomb fuzes. Bloomington. Ammuntion Procurement & Supply Agency. Joliet, Ill.

—**Wilkinson Mfg. Co.,** Fort Calhoun, Neb. $1,229,440. 60mm fin assemblies. Fort Calhoun. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Honeywell, Inc.,** Hopkins, Minn. $1,571,430. Fuzes. $1,520,694. Metal parts for bomblets. New Brighton, Minn. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Chamberlain Corp.,** Waterloo, Iowa. $2,812,622. High explosive warheads for 2.75-inch rockets. Waterloo. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Holston Defense Corp.,** Kingsport, Tenn. $1,672,544. Miscellaneous propellants and explosives. Kingsport. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Mason & Hanger, Silas Mason Co.,** New York, N.Y. $5,463,674. Loading, assembling and packing of explosives and for operations and maintenance activities at the Army Ammunition Plant, Burlington, Iowa. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Harvey Aluminum Sales,** Torrance, Calif. $4,852,422. Classified ammunition and for operations and maintenance activities at the Army Ammunition Plant, Milan, Tenn. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**Raytheon Co.,** Bristol, Tenn. $2,166,480. 750-lb. bomb components. Bristol. Ammunition Procurement & Supply Agency, Joliet, Ill.

—**International Harvester Co.,** Melrose Park, Ill. $1,146,640. Diesel engine driven tractors. Chicago, Ill. Army Mobility Equipment Command, St. Louis, Mo.

—**Raytheon Co.,** Lexington, Mass. $1,635,200. Bomb fuzes. Bristol, Tenn. Army Procurement Detachment, Chicago, Ill.

—**Johnson Corp.,** Bellevue, Ohio. $5,295,448. ½-ton chassis. Bellevue. Army Tank Automotive Command, Warren, Mich.

—**General Motors,** Indianapolis, Ind. $2,232,297. 12-month component improvement program for T–63–A–5A turbo shaft engines for OH–6A helicopters. $2,473,200. T–63–A–5A engines for LOH Aircraft. Indianapolis. Army Aviation Materiel Command, St. Louis, Mo.

—**Bell Helicopter Co.,** Fort Worth, Tex. $1,046,160. Drive shaft assemblies. $3,687,826. Main hub assemblies. $2,300,986. Cylinder assemblies. Fort Worth. Army Aviation Materiel Command, St Louis, Mo.

—**United Aircraft,** Windsor Lock, Conn. $1,682,119. Propeller assemblies for U–1A and OV–1 aircraft. Windsor Lock. Army Aviation Materiel Command, St. Louis, Mo.

—**AVCO Corp.,** Stratford, Conn. $1,689,640. Exhaust diffusers for T–53 engines. Stratford. Army Aviaition Materiel Command, St. Louis, Mo.

—**Raytheon Co.,** Lexington, Mass. $1,000,000. Work on the improved Hawk missile. Bedford, Mass. Army Missile Command, Andover, Mass.

—**Memcor, Inc.,** Huntington, Ind. $6,406,774. Receivers and transmissions for vehicle communication sets. Huntington. Army Electronics Command, Philadelphia, Pa.

—**General Motors,** Indianapolis, Ind. $4,460,194. Transfer assemblies and transmissions for 155mm guns, eight-inch howitzers, and recovery vehicles. $1,211,740. Transmission for personnel, cargo, and Hawk missile carriers. Indianapolis. Army Tank Automotive Center, St. Louis, Mo.

NAVY

1—**University of Washington, Applied Physics Laboratory,** Seattle, Wash. $2,769,000. Research and development in the field of underwater ordnance. Seattle. Naval Ordnance Systems Command.

—**Hazeltine Corp.,** Little Neck, N.Y. $1,212,713. Acoustic detection transmitting sets. Little Neck. Naval Air Systems Command.

—**Raytheon Co.,** Sudbury, Mass. $1,000,000. Alteration kits for Polaris guidance electronic assemblies. Sudbury. Special Projects Office.

2—**General Dynamics,** Pomona, Calif. $3,874,000. Materials and assemblies for the Standard Arm missile. Pomona. Naval Air Systems Command.

—**United Boatbuilders,** Bellingham, Wash. $2,526,262. Personnel landing craft vehicles. Bellingham. Naval Ship Systems Command.

—**Cameron Iron Works,** Houston, Tex. $1,278,626. Inert parts for the MK12 MOD 1 Terrier missile booster. Houston. Naval Ordnance Systems Command.

3—**McDonnell Aircraft,** St. Louis, Mo. $36,000,000. F–4J aircraft. St. Louis. Naval Air Systems Command.

6—**United Aircraft,** Stratford, Conn. $1,677,300. Research and development connected with a mine countermeasures configuration of the CH–53A helicopter. Stratford. Naval Air Systems Command.

—**Beech Aircraft,** Wichita, Kan. $1,230,353. Aerial targets. Wichita. Naval Air Systems Command.

—**Marinette Marine Corp.,** Marinette, Wis. $2,322,120. Mechanized landing craft. Marinette. Naval Ship Systems Command.

—**Vitro Corp. of America,** Silver Spring, Md. $9,394,200. Engineering and supporting services and facilities for Terrier, Tartar and Talos weapons systems. Silver Spring. Naval Ordnance Systems Command.

7—**Melpar, Inc.,** Falls Church, Va. $2,865,013. Airborne radar homing and warning sets. Falls Church. Naval Air Systems Command.

—**Kaiser Aerospace & Electronics Corp.,** Palo Alto, Calif. $1,147,600. Spare parts to support the AN/AVA–1 data display system installed in A/6A aircraft. Palo Alto. Navy Aviation Supply Office, Philadelphia, Pa.

—**American Electric, Inc.,** La Mirada, Calif. $1,515,964. 300-gallon external auxiliary fuel tanks. La Mirada. Naval Air Systems Command.

—**Sperry Rand Corp.,** Great Neck, N.Y. $2,960,000. Increased limitation of authorization for Terrier MK 76 Mods 3 and 5 fire control system modernization. Great Neck. Naval Ordnance Systems Command.

8—**Todd Shipyard,** San Pedro, Calif. $1,600,000. Regular overhaul of the landing ship, dock, USS Alamo (LSD–33). San Pedro. Supervisor of Shipbuilding. Twelfth Naval Dist., San Francisco, Calif.

—**Raytheon Co.,** Sudbury, Mass. $1,221,000. Polaris MK–2 guidance electronics assemblies. Waltham, Mass. Special Projects Office.

—**United Aircraft,** Norwalk, Conn. $9,996,645. A–6A aircraft. Norwalk. Aviation Supply Office, Philadelphia, Pa.

—**M. Rosenblatt & Son, Inc.,** New York, N.Y. $1,042,460. Engineering and design services to modernize DLG–6 guided missile frigates. U. S. Naval Shipyard, Philadelphia, Pa.

—**Bendix Corp.,** Mishawaka, Ind. $2,500,000. Engineering program on the Talos RIM–8 series missile. Mishawaka. Naval Ordnance Systems Command.

—**Collins Radio Co.,** Cedar Rapids, Iowa. $1,038,656. ARN/ARC–51 radio sets used for general communications purposes on airplanes, ships and vehicles. Cedar Rapids. Aviation Supply Office, Philadelphia, Pa.

9—**Aerojet-General Corp.,** Sacramento, Calif. $1,130,720. Polaris A–3 propellant component. Sacramento. Special Projects Office.

—**General Electric,** Pittsfield, Mass. $2,097,289. Poseidon guidance equipment. Pittsfield. Special Projects Office.

10—**General Electric,** Schenectady, N.Y. $3,389,500. Research and development work pertaining to nuclear propulsion. Schenectady. Naval Ship Systems Command.

—**Newport News Shipbuilding & Dry Dock Co.,** Newport News, Va. $1,287,513. Nuclear reactor compartment components. Newport News. Naval Ship Systems Command.

13—**Magnavox Co.,** Fort Wayne, Ind. $3,800,000. Increased limitations of authorization for basic engineering and development of an air droppable sonobuoy system. Fort Wayne. Naval Air Systems Command.

—**Bethlehem Steel Corp.,** Hoboken, N.J. $1,397,777. Overhaul of the ammunition ship USS Mauna Loa (AE–8). Hoboken. Supervisor of Shipbuilding, Third Naval Dist.

14—**United Aircraft,** Stratford, Conn. $6,927,117. HH–3F helicopters for the Coast Guard. Stratford. Naval Air Systems Command.

—**Keltec Industries, Inc.,** Alexandria, Va. $1,640,298. Radar simulators and engineering services and technical training on the equipment. Alexandria. Naval Ship Systems Command.

15—**Raytheon Co.,** Lexington, Mass. $1,000,000. Long lead items for Sparrow III guided missiles. Lowell, Mass. Naval Air Systems Command.

—**Thiokol Chemical Corp.,** Denville, N.J. $5,459,163. Liquid propellant rocket engines. Rockaway, N.Y. Naval Air Systems Command.

16—**General Dynamics,** Groton, Conn. $5,000,000. Long lead time components for a nuclear-powered submarine. Groton. Naval Ship Systems Command.

17—**Tabet Mfg. Co.,** Norfolk, Va. $1,316,031. Radio receiver switchboards. Norfolk. Naval Electronic Supply Office, Great Lakes, Ill.

20—**Galion Amco, Inc.,** Galion, Ohio. $1,314,747. 20mm projectiles. Galion. Navy Ships Parts Control Center, Mechanicsburg, Pa.

21—**Jordon Co.,** Suisun City, Calif. $2,173,000. Improvements at Dry Dock No. 1, U.S. Naval Shipyard, Vallejo, Calif. Western Div., Naval Facilities Engineering Command, San Bruno, Calif.

—**Grumman Aircraft Engineering Corp.,** Bethpage, N.Y. $8,200,000. Research and development work on the EA–6B aircraft. Bethpage. Naval Air Systems Command.

22—**Marinette Marine Corp.,** Marinette, Wis. $7,258,400. 43 landing craft (mechanized). Marinette. Naval Ship Systems Command.

—**Stanford University,** Palo Alto. Calif. $4,300,000. Research work. Palo Alto. Office of Naval Research.

—**Atlas-Bradford Co.,** Houston, Tex. $5,566,496. Mark 45 projectiles. Houston. Navy Ships Parts Control Center, Mechanicsburg. Pa.

—**George Washington University,** Washington, D.C. $1,632,000. Research on logistics planning. Washington, D.C. Office of Naval Research.

23—**Williamette Iron & Steel Co.,** Portland, Ore. $1,298,295. Modification of the USNS General H. H. Arnold (T–AGM–9). Portland. Supervisor of Shipbuilding, Eighth Naval Dist., New Orleans. La.

—**Lear Siegler,** Grand Rapids, Mich. $3,067,571. Loft bomb computer systems. Grand Rapids. Naval Air Systems Command.

—**Norton Mfg. Co.,** Muskegon Heights, Mich. $1,187,030. Numerically controlled propellor profiling machine to machine ship propellers. Muskegon Heights. Navy Purchasing Office. Washington, D.C.

—**Varo, Inc.,** Garland, Tex. $2,512,012. Guided missile launchers. Garland. Naval Air Systems Command.

24—**Martin Marietta,** Middle River, Md. $1,017,031. Classified work on Navy aircraft. Middle River. Naval Air Systems, Command.

27—**Sperry Rand Corp.,** Bristol, Tenn. $2,044,469. Special tooling and special test equipment for the Shrike missile. Bristol. Naval Air Systems Command.

—**General Electric,** Utica, N.Y. $2,300,000. Airborne data processing systems. Utica. Naval Air Systems Command.

—**Sanders Associates, Inc.,** Nashua, N.H. $5,272,621. Electronic equipment. Nashua. Naval Air Systems Command.

—**Johns Hopkins University, Applied Physics Laboratory,** Silver Spring, Md. $23,294,000. Increase in the current research and development on Bumblebee for the Navy, Air Force, and NASA. Silver Spring. Naval Ordnance Systems Command.

28—**General Precision,** Riverdale, Md. $2,446,500. Production of a prototype S2E weapon system trainer with related services and materials. Riverdale. Naval Training Device Center, Orlando, Fla.

—**B-E-C-K—Raber Inc.**, Seattle, Wash. $1,967,700. Construction of an Arctic Research Laboratory, Barrow, Alaska. Northwest Div., Naval Facilities Engineering Command, Seattle, Wash.

—**Brezina Construction Co.**, Pomona, Calif. $1,343,000. Construction of barracks, waves' barracks and commissioned officers' mess (closed) at the Naval Station, Long Beach, Calif. Southwest Div., Naval Facilities Engineering Command, San Diego, Calif.

—**American Construction Co.**, Washington, D.C. $1,424,000. Addition to Air Force Systems Command Headquarters, Building 1535, Andrews AFB, Md. Chesapeake Div., Naval Facilities Engineering Command, Washington, D.C.

29—**LTV, Inc.**, Warren, Mich. $6,305,537. Design, evaluation and demonstration at sea of an engineering model of the Lance landing force support weapon. Warren. Navy Purchasing Office, Los Angeles, Calif.

—**Sealed Service, Inc.**, Elizabeth, N.J. $70,000,000. Containership service from West Coast ports to Vietnam. Military Sea Transportation Service.

30—**Republic Electronics Industries Corp.**, Huntington, N.Y. $3,034,825. Radio navigational sets for aircraft. Huntington. Navy Aviation Supply Office, Philadelphia, Pa.

—**Whiting-Turner Contracting Co.**, Memphis, Tenn. $1,598,000. Construction of an avionics training building at the Naval Air Station, Memphis, Tenn. Southeast Div., Naval Facilities Engineering Command, Charleston, S.C.

—**General Dynamics**, Pomona, Calif. $120,651,191. Production of the Standard missile. Pomona. Naval Ordnance Systems Command.

31—**Teletype Corp.**, Skokie, Ill. $4,542,446. Various types of communication sets. Skokie. Navy Purchasing Office, Washington, D.C.

—**Pasco Steel Corp.**, Pomona, Calif. $3,881,808. Pontoon assemblies. Columbus, Ga. and Pomona. Navy Purchasing Office, Los Angeles, Calif.

—**Intercontinental Mfg. Co.**, Garland, Tex. $9,120,000 500-lb. bomb bodies. Garland. Navy Ships Parts Control Center, Mechanicsburg, Pa.

—**Newport News Shipbuilding & Drydocking Co.**, Newport News, Va. $40,000,000. Advance planning scheduling, engineering and design work, material procurement and prefabrication for preparation for construction of nuclear-powered attack aircraft carrier CVA(N) 68. Newport News. Naval Ship Systems Command.

—**North American Aviation**, Anaheim, Calif. $1,510,506. Modification of ships inertial navigation system equipment on the nuclear powered submarine USS Lafayette (SSBN–616). Anaheim. Naval Ship Systems Command.

MARINE CORPS

9—**Goodyear Tire & Rubber Co.**, Akron, Ohio. $3,787,350. Manufacture of 58, 60,000-gallon capacity, tactical airfield fuel dispensing systems. Akron. Headquarters, Marine Corps.

29—**General Motors**, Hudson, Ohio. $2,397,228. Scoop-type loaders and associated equipment. Cleveland, Ohio. Headquarters, Marine Corps.

31—**FMC Corp.**, San Jose, Calif. $2,500,000. Modernization of 74 LVTH–6 vehicles to the LVTH–6A1 configuration. San Jose. Headquarters, Marine Corps.

AIR FORCE

1—**General Electric**, Cincinnati, Ohio. $40,822,784. Production of J 79–10 aircraft engines. Evendale, Ohio. Aeronautcial Systems Div., (AFSC), Wright-Patterson AFB, Ohio.

2—**General Electric**, Cincinnati, Ohio. $44,349,854. Production of J–79–15 and J–75–17 aircraft engines. Evendale, Ohio. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio.

3—**Cessna Aircraft**, Wichita, Kan. $2,700,264. Production of spare parts for light observation aircraft. Wichita. San Antonio Air Materiel Area, (AFLC), Kelly AFB, Tex.

—**General Motors**, Milwaukee, Wis. $1,482,829. Overhaul and modification of missile gyroscopes. Milwaukee. Oklahoma City Air Materiel Area, (AFLC), Tinker AFB, Okla.

—**Honeywell, Inc.**, Hopkins, Minn. $8,400,000. Production of bomb fuzes and related equipment. Hopkins. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio.

—**Bendix Corp.**, Baltimore, Md. $1,169,076. Production of airborne communications equipment. Baltimore. Warner-Robins Air Materiel Area, (AFLC), Robins AFB, Ga.

—**TRW, Inc.**, Cleveland, Ohio. $1,327,679. Designing, fabricating and testing a prototype miltitube boiler and condenser system. Cleveland. Systems Engineering Group, Research and Technology Div., (AFSC), Wright-Patterson AFB, Ohio.

6—**B. F. Goodrich Co.**, Akron, Ohio. $1,862,691. C–130 and C–133 aircraft tires. Akron. Ogden Air Materiel Area, (AFLC), Hill AFB, Utah.

—**General Tire & Rubber Co.**, Akron, Ohio. $1,251,486. C–130 and C–133 aircraft tires. Akron. Ogden Air Materiel Area, (AFLC), Hill AFB, Utah.

7—**Hallicrafters Co.**, Chicago, Ill. $1,210,200. Airborne electronic countermeasure systems. Chicago. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio.

—**Boeing Co.**, Seattle, Wash. $2,000,000. Assembly, installation and checkout of Minuteman missiles for the Grand Forks, N.D., AFB complex. Ballistic Systems Div., (AFSC), Norton AFB, Calif.

8—**Hughes Aircraft**, Culver City, Calif. $1,325,200. Production of test equipment for the Falcon air-to-air missile. Culver City. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio.

—**Northrop Corp.**, Hawthorne, Calif. $1,670,029. Production of spare parts and ground equipment for F–5 aircraft. Hawthorne. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio.

—**Philco Corp.**, Palo Alto, Calif. $7,621,000. Work on a communications satellite program for the United Kingdom. Palo Alto. Space Systems Div., (AFSC), Los Angeles, Calif.

9—**Motorola**, Scottsdale, Ariz. $3,660,000. Bomb fuzes. Scottsdale. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio.

—**Bendix Corp.**, Baltimore, Md. $1,891,000. Modification and improvement of the AN/FPS–85 space track radar. Towson, Md., and Eglin AFB, Fla. Rome Air Development Center, Griffiss AFB, N.Y.

—**AVCO Corp.**, New York, N.Y. $15,683,000. Design, development, test and production of penetration aids. Stratford, Conn. and Wilmington, Mass. Ballistic Systems Div., (AFSC), Norton AFB, Calif.

—**Honeywell, Inc.**, Hopkins, Minn. $2,095,590. Production equipment for aircraft ordnance. St. Louis Park, Minn. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio.

10—**General Dynamics**, San Diego, Calif. $2,190,000. 23 Atlas missiles to be used in a re-entry vehicle development program. San Diego. Ballistics Systems Div., (AFSC), Norton AFB, Calif.

13—**General Electric**, Philadelphia, Pa. $1,500,000. Re-entry vehicle flight testing. Philadelphia. Ballistics Systems Div., (AFSC), Norton AFB, Calif.

—**Douglas Aircraft**, Long Beach, Calif. $3,214,904. Production of aircraft ordnance ejector racks. Torrance, Calif. Warner Robins Air Materiel Area, (AFLC), Robins AFB, Ga.

14—**Honeywell, Inc.**, Hopkins, Minn. $9,047-500. Production of land mines and associated equipment. Hopkins. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio.

—**Goodyear Aerospace Corp.**, Akron, Ohio. $4,488,000. Air cargo handling pallets. Akron. Warner Robins Air Materiel Area, (AFLC), Robins AFB, Ga.

—**Boeing Co.**, Seattle, Wash. $1,147,000. Production of missiles and related equipment for the sixth Minuteman wing. Seattle. Ballistics Systems Div., (AFSC), Norton AFB, Calif.

15—**L. T. Industries, Inc.**, Dallas, Tex. $4,547,063. Production of aircraft bomblet dispensers. Garland, Tex. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio.

—**General Electric**, Philadelphia, Pa. $1,300,000. Work on the Mark–12 re-entry vehicle program. Philadelphia. Ballistics Systems Div., (AFSC), Norton AFB, Calif.

—**General Motors**, Indianapolis, Ind. $3,424,000. Production of T–56 turboprop engines and related equipment. Indianapolis. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio.

16—**Wentworth Institute**, Boston, Mass. $1,088,989. Research in rocket payload instrumentation. Boston. Electronics Systems Div., (AFSC), L. G. Hanscom Field, Mass.

17—**General Motors**, Milwaukee, Wis. $9,557,300. Work on the inertial guidance system for the Titan III space booster. Milwaukee. Space Systems Div., (AFSC), Los Angeles, Calif.

20—**General Electric**, Cincinnati, Ohio. $1,500,000. Development work on a Vertical/Short Take-off (V/STOL) aircraft program, Evendale, Ohio. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio. ●

21—**Lockheed Aircraft**, Marietta, Ga. $38,957,500. Production of C–130 aircraft. Marietta. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio.

—**Martin-Marietta**, Denver, Colo. $22,884,616. Work on the Titan III space booster. Denver. Space Systems Div., (AFSC), Los Angeles, Calif

—**General Dynamics**, San Diego, Calif. $1,500,000. Work on Atlas/Agena space boosters. San Diego. Space Systems Div., (AFSC), Los Angeles, Calif.

23—**General Electric**, West Lynn, Mass. $2,687,380. Production of spare parts for J–85 engines. West Lynn. Oklahoma City Air Materiel Area, (AFLC), Tinker AFB, Okla.

—**Boeing Co.**, Wichita, Kan. $3,168,380. Modification kits for electronic equipment on B–52 aircraft. Wichita. Oklahoma City Air Materiel Area, (AFLC), Tinker AFB, Okla.

—**I.B.M.**, Gaithersburg, Md. $2,900,000. Engineering research and development on improved computer programming techniques. Omaha, Neb. Rome Air Development Center, (AFSC), Griffiss AFB, N.Y.

—**McDonnell Co.**, St. Louis, Mo. $1,582,000. Production of modification kits, spare parts and related data for F–4 aircraft. Robertson, Mo. Ogden Air Materiel Area, (AFLC), Hill AFB, Utah.

27—**Philco-Ford Corp.**, Philadelphia, Pa. $2,090,150. Production of components for the Sidewinder air-to-air missile. Philadelphia. Warner Robins Air Materiel Area, (AFLC), Robins AFB, Ga.

28—**General Electric**, West Lynn, Mass. $3,940,357. Development work on T53–14 helicopter engines. West Lynn. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio.

30—**North Electric Co.**, Galion, Ohio. $1,500,000. Prototype telephone control office. Galion. Electronics Systems Div., (AFSC), L. G. Hanscom Field, Mass.

31—**Whittaker Corp.**, Chatsworth, Calif. $2,400,000. Procurement of electronic equipment. Chatsworth. Aeronautical Systems Div., (AFSC), Wright-Patterson AFB, Ohio.

Army To Phase Out Chickasaw, Shawnee

A plan for phasing out all of the Army's CH–21 Shawnee and all but two of its UH–19 Chickasaw helicopters by May 1968 has been approved by Army Chief of Staff.

The planned phase out results from the helicopters having passed their normal life expectancy. They no longer meet operational requirments and are costly to repair and operate.

There are 143 Chickasaws in inventory. All of these are assigned to the continental United States. The two remaining after the planned phase-out will continue to support Nike-X tests on Kwajalein Atoll.

More than half the 146 Shawnees in inventory are assigned to major commands.

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First Switching Center Outside Mainland United States Accepted

The first Defense Communications System Automatic Electronic Switching Center (AESC) outside mainland United States, located at Wahaiwa, Hawaii, was formally accepted by the Navy for the Defense Communications Agency on April 3.

The Hawaii center is part of the Automatic Digital Network (AUTODIN) planned as a world-wide network to accept, relay and deliver data, teletypewriter and computer communications between various types and combinations of transmitting and receiving equipment. The AUTODIN system supports DOD communications needs in the areas of supply, inventory control, personnel, finance, budget, operations, intelligence and medical.

Eight other AUTODIN switches will be installed in the Pacific area and three centers are planned for Europe.

Operated by the Navy, the Hawaii center is a part of the continental United States AUTODIN system which now has eight centers located at McClellan AFB and Norton AFB, Calif.; Tinker AFB, Okla.; Gentile AFS, Ohio; Andrews AFB, Md.; Hancock Field, Syracuse, N.Y.; Albany, Ga.; and Ft. Detrick, Md.

AUTODIN is a high speed, computer controlled, common user, secure data system. It is comprised of the AESC and a variety of subscriber terminals to meet specific requirements of perforated tape, machine cards and magnetic tape.

The two types of switching services provided at the AESC's are message switching (MSU) and circuit switching (CSU). The MSU processes traffic using a store and forward feature. It is used to accommodate high traffic volume and to expedite the flow of high traffic volume and to expedite the flow of high precedence messages. The CSU provides automatic direct switching of single address messages between identical tributary terminal equipment served by a switching center. It also has a capacity to introduce traffic into the mesage switching service.

Prime contractor for AUTODIN work and service in the United States is Western Union Telegraph Co. with the Radio Corp. of America as manufacturer of major equipment. The Philco Corp. is prime contractor for switching centers overseas.

AUTODIN and its complementary net, Automatic Voice Network (AUTOVON), are the result of a DOD decision in 1963 to modernize its Defense Communications System to provide automatic switching systems for voice, teletypewriter and data communications.

Navy Labs Merge To Form Ship R&D Center

The Navy Marine Engineering Laboratory, Annapolis, Md., and the David Taylor Model Basin, Carderock, Md., have been consolidated to form the Naval Ship Research and Development Center. The consolidation became effective March 31, 1967.

Merging of the two activities will provide the Navy a single research and development center with the capabilities and expertise to work on ship structural and propulsion concepts on a total ship basis.

The commanding officer and director of the center is Captain Manuel da Costa Vincent, USN, who will operate from the center headquarters at Carderock, Md. The Annapolis Division will be headed by Commander J. D. Evans, USN, as officer-in-charge.

Dr. Alan Powell is the technical director of the new center. He will be assisted by the following associate technical directors: Mr. H. V. Nutt, Marine Engineering Laboratory; Dr. William Cummins, Hydromechanics Laboratory; Commander Thomas Lechner, USN, Aerodynamics Laboratory; Dr. William Murray, Structural Mechanics Laboratory; Mr. Gene Gleissner, Applied Mathematics Laboratory; and Mr. Westley Curtis (Acting), Acoustics and Vibrations Laboratory.